(33,429)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1928.

No. 128

SANITARY REFRIGERATOR CO., PETITIONER,

vs.

ALEXANDER F. WINTERS AND BASIL R. CRAMPTON

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT

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[fol. 1] [Caption omitted.]

IN UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF WISCONSIN

In Equity

ALEXANDER F. WINTERS and BASIL R. CRAMPTON

vs.

SANITARY REFRIGERATOR COMPANY

For Infringement of United States Letters Patent No. 1,385,102

BILL OF COMPLAINT—Filed Nov. 23, 1925

Alexander F. Winters and Basil R. Crampton, residents of the City of Grand Rapids in the County of Kent and State of Michigan and citizens and inhabitants of said State, bring this, their bill of complaint, against Sanitary Refrigerator Company, a corporation which, plaintiffs are informed and believe, was organized and exists under and by virtue of the laws of the State of Wisconsin and having its office and principal place of business in the City of Fon du Lac in the County of Fon du Lac and State of Wisconsin, with the Eastern District of Wisconsin, and complain and say:

I. This cause arises under the patent laws of the United States, being a suit to restrain infringement of certain here-[fol. 2] inafter named Letters Patent of the United States, and for an accounting of profits and damages arising from said infringement; wherefore this Court has jurisdiction.

II. Heretofore, and prior to December 7, 1920, Alexander F. Winters and Basil R. Crampton, being then, as now, residents of the City of Grand Rapids in the County of Kent and State of Michigan, were the original, first, and joint inventors of certain new and useful improvement in Latch, which improvements were not known or used by others in this country before their invention thereof, and were not patented or described in any printed publication in this or

any foreign country before their invention thereof, and were not in public use or on sale in the United States or described in any patent or printed publication anywhere for more than two years prior to their application for patent therefor in United States, and were not patented in any country foreign to the United States on an application filed by them or their legal representatives or assigns, more than twelve months prior to their application for patent therefor in the United States, and which have not been abandoned.

III. The said Alexander F. Winters and Basil R. Crampton, being as aforesaid, the original, first and joint inventors of said improvements, made application in due form of law on the seventh day of December 1920, to the Commissioner of Patents, for the grant of letters-patent of the United States for the said improvements; whereupon, after due proceedings were had, letters-patent No. 1,385,102, for said improvements, duly sealed, countersigned, and executed were issued to said Alexander F. Winters and Basil R. Crampton, whereby there was vested in them, their legal representatives and assigns, for the term of seventeen years from and after the nineteenth day of July, 1921, the exclusive right to make, use and vend said improvements throughout the United States and territories thereof, the original of which patent or a duly certified copy thereof is ready to be produced in court.

IV. By virtue of the premises, plaintiffs became are now and have been at all times since the nineteenth day of July, 1921, joint and exclusive owners of said letters-patent No. 1,385,102, and the inventions therein described, disclosed and claimed, and of all rights and privileges granted and secured thereby. Plaintiffs are owners of two-thirds of the capital stock of the corporation, Winters, Stryker & Crampton, a corporation of the State of Michigan, located at Grand Rapids, Michigan, where the Latch shown, described and claimed, by said letters-patent No. 1,385,102 has been manufactured and sold. Large sums of money have [fol. 3] been invested and expended and great trouble and expense in and about said invention has been borne for the purpose of developing the same and introducing it into use and making the same profitable to plaintiffs and the

corporation with which they are connected, and useful to the public. Said corporation is equipped and has the necessary capital and facilities for supplying all demands for the invention under said patent, promptly at a reasonable cost and at maximum efficiency. Plaintiffs have fully advised the public and the defendant of its ownership of said patent aforesaid, notwithstanding which, said defendant persists in infringement after said notice.

V. The Latch construction developed by plaintiffs is very useful, attractive in appearance and effective mechanically, so that it had an immediate sale in large quantities and was eagerly accepted by refrigerator manufacturers, displacing other types of latch constructions before used by them. Great commercial demand for the Latch constructions in accordance with the aforesaid patent of plaintiffs, was created and in a very short time large orders for said Latch constructions were received and have been continuously received since about the first of the year 1921 to the present time.

VI. The defendant, on the refrigerators which it manufactures, uses a latch construction purchased from the Dent Hardware Company, a corporation located at Fullerton in the State of Pensylvania, which is made in such close imitation of plaintiffs' latch that differences in the two are not discernable to ordinary observers, and has infringed said patent aforesaid by using said latch construction on its refrigerators and by selling the same attached to its refrigerators so that the invention claimed in said patent has been used and sold within the Western District of Wisconsin prior -o the commencement of this suit, and since the date of issue of said patent No. 1,385,102; and the defendant is still doing so and threatens to do so in the future. Defendant plans to interfere with the business and has interfered with the business which plaintiffs have, at great expense and effort, developed in the manufacture and sale of devices made in accordance with the said patent aforesaid, and infringed said patent all in defiance of the rights secured to the plaintiffs and to their great and irreparable loss and injury and whereby plaintiffs have been, are still being, and will be so long as such infringement continues greally and irreparably damaged and injured and deprived

[fol. 4] of profits which plaintiffs would otherwise make under said patent.

VII. Great and irreparable injury has resulted to plaintiffs from said infringement and great gains and profits have accrued therefrom to defendant which, in equity, belong to plaintiffs and should be accounted for by said defendant and paid to plaintiffs.

VIII. Plaintiffs are without adequate remedy, save in a court of equity, where matters of this nature are properly cognizable.

IX. Plaintiffs pray: (1) that defendant be required to answer this bill of complaint, but not under oath, answer under oath being expressly waived; (2) that a subpœna, ad respondendum be issued by the clerk of this court, directed to the defendant to answer the bill of complaint; (3) that an injunction pendente lite, and a permanent injunction be issued restraining the defendant, its respective agents, employes and confederates from further infringement of the aforesaid letters-patent in suit; (4) that defendant account for and pay to plaintiffs its profits and plaintiffs' damages arising from said infringement; and (5) that plaintiffs have such further relief as the premsies and equities may require.

Alexander F. Winters, Basil R. Crampton. Louis O. French, Solicitor for Plaintiffs, 68 Wisconsin St., Milwaukee, Wisconsin; Frank E. Liverance, Jr., Counsel for Plaintiffs.

Duly sworn to by Alexander F. Winters and Basil R. Crampton. Jurat omitted in printing.

[fol. 5] [File endorsement omitted.]

In United States District Court

Answer—Filed Dec. 29, 1925

To the Honorable, the Judges of the above entitled Court:

The answer of the above-entitled defendant to the Bill of Complaint exhibited against it by the above-named plaintiff.

1. Defendant admits the averments respecting its incorporation and place of business.

2. Defendant admits that this cause arises under the patent laws of the United States and that this Court has Jurisdiction.

3. Defendant admits that prior to December 7, 1920 Alexander F. Winters and Basil R. Crampton were residents of the City of Grand Rapids, in the County of Kent, and State of Michigan, but denies that said plaintiffs were the original, first and joint inventors of certain new and useful improvements in a latch; denies that said improvements were not known or used by others in this country before their invention thereof; denies that they were not patented or described in any printed publication in this or any foreign country before the invention thereof; denies that they were [fol. 6] not in public use or on sale in the United States or described in any patent or printed publication anywhere for more than two years prior to their application for patent thereof in the United States; denies that they were not patented in any country foreign to the United States on an application filed by them or their legal representatives or assigns, more than twelve months prior to their application for patent therefor in the United States and denies that said improvements have not been abandoned.

4. Defendant admits that said Alexander F. Winters and Basil R. Crampton made application on the 7th day of December, 1920 to the Commissioner of Patents for the grant of letters patent of the United States for the said improvements, and admits that after due proceedings were had, letters patent No. 1,385,102 for said improvements duly sealed, countersigned, and executed were issued to said Alexander F. Winters and Basil R. Crampton, but defendant denies that said letters patent were issued in due form of law, and denies that there was vested in them, their legal representatives and assigns, for the term of seventeen years from and after the 19th day of July, 1921, any exclusive rights and allege the contrary to be true.

5. Defendant denies that the plaintiffs are now and have been at all times since the 19th day of July, 1921, joint and exclusive owners of said Letters Patent No. 1,384,102 and the inventions therein described, disclosed and claimed and

of all rights and privileges granted and secured thereby, and leave plaintiffs to make full proof thereof. Defendant has no knowledge whether or not plaintiffs are owners of two-thirds of the capital stock of the corporation, Winters, Stryker & Crampton, where it is alleged that the latch of said letters patent has been manufactured and sold and leaves plaintiffs to make full proof thereof. Defendant denies that large sums of money have been invested and expended and great trouble and expense in and about said invention have been borne for the purpose of developing the same and introducing it into use and making the same profitable to plaintiffs and the corporation with which they are connected, and useful to the public. Defendant denies that said corporation is equipped and has the necessary capital and facilities for supplying all demands for the invention under said patent, promptly, at a reasonable cost and at maximum efficiency. Defendant denies that plaintiffs have fully advised the public and the defendant of its ownership of said patent aforesaid, and denies that defend- [fol. 7] ant persisted in infringement of any valid claim of said patent after notice.

6. Defendant denies that the latch construction developed by plaintiffs is very useful, attractive in appearance and effective mechanically, and denies that it had an immediate sale in large quantities and was eagerly accepted by refrigerator manufacturers, displacing other types of latch constructions before used by them. Defendant denies that great commercial demand for the latch constructions in accordance with the aforesaid patent of plaintiffs was created and denies that in a very short time large orders for said latch constructions were received and have been continuously received since about the first of the year 1921 to the present time.

7. Defendant admits that on the refrigerators which it manufacturers it uses a latch construction purchased from the Dent Hardward Company, a corporation located at Fullerton, in the State of Pennsylvania, but it denies that said latch is made in close imitation of plaintiffs' latch; denies that it has infringed said patent aforesaid by using said latch construction on its refrigerators and by selling the same attached to its refrigerators; denies that the in-

vention named in said patent has been used and sold in the Western District of Wisconsin prior to the commencement of this suit, and since the date of issue of said patent No. 1,385,102; and denies that it is still doing so and threatens to do so in the future. Defendant denies that it plans to interfere with the business and has interfered with the business which plaintiffs have, developed in the manufacture and sale of devices made in accordance with the said patent aforesaid; denies that it is infringing said patent in defiance of the rights secured to the plaintiffs and to their great irreparable loss and injury and whereby plaintiffs have been, are still being, and will be so long as such infringement continues, greatly and irreparably damaged and injured and deprived of profits which plaintiffs would otherwise make under said patent, and allege the contrary to be true.

8. Defendant denies that great and irreparable injury has resulted to plaintiffs from said infringement and denies that great gains and profits have accrued therefrom to defendant, which, in equity, belong to plaintiffs and should be accounted for by said defendant and paid to plaintiffs.

9. Defendant denies that plaintiffs are without adequate remedy, save in a court of equity.

10. Further answering, defendant avers that prior to the alleged invention of the said Alexander F. Winters and [fol. 8] Basil R. Crampton, set forth in the letters patent sued upon, the said alleged invention had been patented or described in the following Letters Patent of the United States, and that, therefore, said Letters Patent sued upon are null and void, namely:

M. Judd, No. 6,907, Feb. 8, 1876;
F. P. Catlin, No. 52,119, Jan. 16, 1866;
H. F. Keil, No. 554,448, Feb. 11, 1896;
H. H. Dent, No. 670,506, Mch. 26, 1901;
Hadka, No. 743,716, Nov. 10, 1903;
Blye, No. 1,238,876, Sept. 4, 1917;
Ward, No. 1,250,736, Dec. 18, 1917;

11. And, further answering, the defendant avers that prior to the alleged invention of the said Alexander F.

Winters and Basil R. Crampton, in Latches, set forth in the Letters Patent sued upon,—the said alleged invention was known to and used by the foregoing persons, at various places,—and that therefore said Letters Patent are null and void.

12. Defendant further avers on information and belief that the invention of said Winters & Crampton patent was known to and used by other persons in this and foreign countries, and is patented and described in other Letters Patent of this and other countries, the prior uses and names of which persons and the numbers and dates of which Letters Patent are at present unknown to defendant, but which when ascertained defendant prays leave to insert by amendment in its answer.

13. Defendant, further answering, avers that the Letters Patent No. 1,385,102, to Winters & Crampton, herein sued upon are null and void, because the subject matter therein set forth and claimed is not patentable under the laws of the United States in view of the state of the art relating to the manufacture and use of latches, and further avers that the subject-matter of said patent involves no more than an ordinary expedient of good workmanship and mechanical skill, over prior constructions.

14. Defendant, further answering, avers that the claims of the Letters Patent sued upon cannot be construed to cover or include anything ever made, sold, or used by this defendant, and that they are invalid and ineffectual for such purpose, not only because of the cancellations, of the declarations amounting to disclaimers, and of the express limitations and restrictions, made or assented to by said patents in their application for said Letters Patent, and, [fol. 9] moreover, made or assented to in consequence of rejections and objections by the Patent Office, which were acquiesced in by the applicants as a prerequisite to obtaining the allowance of their said Letters Patent as finally issued, all as disclosed by the file-wrapper of said Letters Patent, ready in court to be produced.

15. Defendant further answering, and in conclusion, denies that it has ever at any time or at any place made, sold or used the alleged invention or substantial and ma-

terial parts thereof described in the Letters Patent recited in the Bill, and made the subject matter of the claims thereof when properly construed, and denies that it intends to so do.

All of which matters and things this defendant is ready and willing to aver, maintain and prove, as this Honorable Court shall direct, and therefore prays that the Bill of Complaint herein may be dismissed with its reasonable costs, charges and disbursements in this behalf most wrongfully sustained, and to be taxed.

Sanitary Refrigerator Co. Wm. Mauthe, Pres. H. R. Potter, Secretary. John W. McMillan, Solicitor for Defendant. E. Hayward Fairbanks, of Counsel for Defendant. (Corporate Seal.)

[File endorsement omitted.]

Duly sworn to by Wm. Mauthe. Jurat omitted in printing.

[File endorsement omitted.]

[fol. 10] IN UNITED STATES DISTRICT COURT

* * * * * * *

Condensed Statement of Evidence—Filed June 27, 1927

Condensed Record Pursuant to Equity Rule 75

The cause came on for trial before Honorable F. A. Geiger at 4:45 o'clock P. M. on February 18th, 1927.

PLAINTIFF'S PROOFS IN CHIEF

BASIL R. CRAMPTON testified that he was forty-five years old, was vice-president of the Winters & Crampton Manufacturing Company, refrigerator hardware manufacturers, which Company or its predecessors had been engaged in the manufacture of refrigerator hardware for between eight and nine years, he being one of the inventors of

Patent No. 1,385,102 issued July 19, 1921, offered in evidence as Plaintiffs' Exhibit No. 1. He had charge of the sales and was assistant in manufacture and supervising. About four weeks after the latch of the patent in suit was developed it was offered for sale with very good success being sold to the Sanitary Refrigerator Company, Bowen Refrigerator Company, the Illinois Refrigerator Company, the Husman Refrigerator Company, the Tennessee Furniture Corporation, the Banta Refrigerator Company and the Ligonier Refrigerator Company. About 90% of commercial refrigerators, groceries and hotels and butcher shops are using this principle of latch, the plaintiffs' Company selling all of the commercial refrigerators except two or three companies. Plaintiffs' latch was also sold to household refrigerator companies as the Sanitary Refrigerator Company or Illinois Refrigerator Company, the Bowen Refrigerator Company and the Arlington Refrigerator Company, and the Tennessee Furniture Corporation.

The Court here said: "I want to say now, Mr. Liverance, that if the art here discloses sufficient breadth of position given to the device covered by the patent, why, the question whether it is evaded by merely putting on a lug rather than using the other side of the keeper, is a very narrow question."

Mr. Liverance stated that he contended that the lug comes in the terms of the claim and is the same thing, an [fol. 11] evasion of the patent and that the prior art does not require any interpretation to restrict it to that point.

The Court then said: "The question first in order is where this patent stands on the art. For present purposes I will say, I will give it the benefit of the presumption to which it is entitled and express my present view that the defendant's device shows what, in the absence of contravening art, should be held to be an evasion."

Mr. Crampton then testified that over 2,000,000 latches under the patent in suit had been sold and that 90% of the commercial refrigerator manufacturers use this principle, that particular latch.

Mr. Liverance then said that what experting on the prior art is needed, he would take care of it in the argument,

and he also stated defendant had already taken its testimony.

On cross-examination, Mr. Crampton stated that 90% of the volume of hardware used on commercial refrigerators was plaintiffs' latch represented by the patent in suit, and that only 10% was manufactured by other companies, the manufacture of the plaintiffs' latch in suit starting in January 1921.

DEFENDANT'S TESTIMONY

CHARLES C. KAISER testified that he was seventy-five years old, residing in Allentown, Pa. and was connected with the Dent Hardware Company, a Pennsylvania Corporation, manufacturing refrigerators, cold storage hardware and iron doors, etc., which Corporation had been in existence since 1894, a period of thirty-two years, the present officers being H. H. Dent, President, H. C. Dent, Vice-President, H. P. Neward, Secretary, M. R. Newhard, Ass't Secretary, Chas. C. Kaiser, Treasurer and Roy K. Wise, Ass't Treasurer.

The Dent Hardware Company has about 250 employees and in 1894 the locks then used were the invention of Mr. Kaiser and prior to that time there was practically no outside or service lock used in connection with refrigerators. The Dent Hardware Company was not the first but practically the first to make outside refrigerator locks used in quantities. Mr. Kaiser and his associates had a practical working knowledge of this latch business.

The Court: This testimony doesn't amount to much except as we can see the patents.

The early Dent Patent No. 670,506, patented March 26, 1901 was one of the first practical refrigerator latches [fol. 12] on the market in the year 1901. These latches were made in very large quantities of thousands every year and many repeat orders were received, this latch giving good satisfaction.

The Court: Let's get to an examination of these patents and see where any of them touch the art covered by the

plaintiffs' patent, which is quite specific. I have no doubt the defendant will prove the existence of a lot of latches.

Mr. Liverance: Innumerable latches.

(Informal discussion between Court and Counsel.)

The Court: All right. Go on, Mr. McMillan.

(Whereupon Mr. McMillan read excerpts from the deposition of William J. Jackson.)

The Court: How did these depositions ever get into this form. Here is a man who is apparently an expert, who is apparently deciding this case. I am willing to have the aid of anybody connected with the art, but I manifestly——

Mr. McMillan: He is giving his reasons, your Honor.

The Court: That is very true; but he is directing himself to the question, is there anything novel about this. If he says there was nothing novel about it because there were other patents here, the patents here furnish the answer to the questions.

Mr. McMillan: He refers to those.

The Court: Yes, I know, but that doesn't make the patent any better. He is dealing there with an ultimate question. If, as an expert, for the purpose of elucidating the device, he points out the mechanical structure, that is one thing, but so far as the patents are concerned, the testimony isn't necessary unless it can fairly be said it would be an aid to the Court in understanding it. The statement of the witness when pointing them out that he is unable to see any novelty about them, that may be true. That may be due to his infirmities. He is arguing the case with the idea of substantiating his conclusion, which isn't for him to express, as to whether there was a novelty.

The peculiar part of this case is that the defendant evidently claims at one and the same time the plaintiffs' structure, Crampton's, is devoid of novelty, and yet the defendant's patentee recognized Crampton's patent and seeks to differentiate from it on mighty narrow grounds.

Mr. McMillan: The patent of the plaintiff is a very narrow patent.

The Court: Yes; but if the plaintiffs' patent is not any good the defendant's can't be much better. That is not here in the case at all. We are not required to pass on the defendant's patent as such.

[fol. 13] Mr. McMillan: If the Court please, we haven't as yet made much of a record in this case.

The Court: All right. Supposing you make a record. I think the record will be confined, as a practical matter, to the patents. I do not care to hear any depositions that involve discussion of patents by an expert, an expert who has discussed these patents in a way that may be helpful to the parties. Counsel can get that discussion before the Court when reading the expert's deposition.

Mr. McMillan: You don't want to hear any part of that deposition?

The Court: Why, no. I have the patents here in a way that you gentlemen can discuss the patents far more effectively for the court to grasp than the Court can grasp by reading from a position. If you gentlemen have been diverted from a course you otherwise would have pursued in introducing evidence here, you can start now.

Mr. Liverance: If the Court please, the only evidence I have to introduce is a little rebuttal testimony.

The Court: I assumed your case was made by introducing the patent and these exhibits.

Mr. Liverance: Yes. I have no experts.

The Court: You may make your offers of these various patents, Mr. McMillan, alleged anticipating art patents.

Mr. McMillan: There are some of these patents in this book which are not cited in the answer, but Mr. Fairbanks and Mr. Liverance have agreed under a stipulation they may be recevied in evidence as if they were pleaded at the outset.

The Court: All right.

Mr. McMillan: Shall I offer these by number, or shall I just offer the book as an exhibit, the original book which I now have here?

The Court: Offer them as you have them there, so far as I am concerned. I shall ask you sooner or later to point out what particular patent or patents are relied on here. This is true, Mr. McMillan. I don't say that the defendant here is held to what is said in the patent under which the defend-

ant meets this, necessarily, but that is rather strong evidence against the defendant of his conception that he was making a structure which, upon examination, would be regarded as being within the Crampton patent. He says he isn't following Crampton, he disclaims Crampton.

Mr. McMillan: That is true.

The Court: If he disclaims Crampton, and yet his device appears to be so close to Crampton, is his device novel, an [fol. 14] independent invention, something that the art has not heretofore suggested?

Mr. McMillan: As to form only.

The Court: Or, is he following old teachings of the art?

Mr. McMillan: I think he is following old teachings of the art. The only novelty in his patent or in the Winters-Crampton patent is in the particular features described in those patents.

The Court: Well, yes; but does he intend in this case to concede novelty to Crampton?

Mr. McMillan: He does not.

The Court: He says Crampton is old?

Mr. McMillan: He says Crampton is old.

The Court: Whether Crampton is old or new, he doesn't get away from Crampton except by the use of the lug.

Mr. McMillan: His position on that is he is more closely allied to the prior art in connection with his construction than Crampton is.

The Court: But in his patent he does not disclaim the prior art.

Mr. McMillan: No, he does not disclaim the prior art.

The Court: If his construction is closer to some other prior art structure, it is rather significant that he seemed to think he was closer to Crampton than anybody else, and that he had to disclaim Crampton.

Mr. McMillan: He disclaimed Crampton on account of a citation, I presume.

The Court: No. This was in his original application.

Mr. McMillan: I don't understand it so from the brief.

The Court: It isn't in the brief. It is right in his specification.

Mr. McMillan: I presumed that was put in afterwards on citation of Crampton to his patent device.

The Court: Well, I don't know.

Mr. Liverance: That is so, your Honor. Winters and Crampton was cited in this application, and then this disclaimer was put in.

The Court: It isn't a disclaimer, doesn't amount to anything.

Mr. Liverance: Well, he didn't claim what was in that, I believe.

The Court: All right. Make your offers.

Mr. McMillan: Practically all these patents are referred to in the deposition which I started to read on Friday.

The Court: Let's assume your deposition is in evidence. [fol. 15] Mr. McMillan: All right.

The Court: And has be-n read.

Mr. McMillan: And that these patents are received in evidence in connection with that deposition?

The Court: Yes.

Mr. McMillan: That also brings into the record, I think, in Mr. Jackson's testimony, the four exhibits, the square one.

The Court: These two.

Mr. McMillan: Yes, they are exhibits; "Defendant's Exhibit 1914 Latch," which I understand is the Condit patent, or substantially that type, and the original old-fashioned latch of the defendant, which has just the one movement for tightening the door and a lug on top for opening it. Then there is also this 1912 device of the defendant which seats with the keeper member on the door being slammed, with a beveled surface on the keeper, and it has a lug at the head of the latch member which presses against a device similar to what is on the defendant's latch now.

The Court: Yes.

Mr. McMillan: That is the defendant's 1912 latch. Those five exhibits and patents to which I referred constitute the defendant's case.

Mr. Kaiser then testified that he recognized the drawing of the Schrader Patents No. 1,170,685, 1,128,727, 1,265,120, 1,117,709, 1,567,867 and 1,567,866 and that he had manufactured refrigerator locks or latches under said patents, to the extent of a great many thousands each year.

In these various types of latches the latch member is sometime pivoted to the door and sometimes to the jamb.

In 1901, according to the early Dent Patent No. 670,506, it was common practice to pivot the lever latch to the door or to brackets or lugs on the door. As far back as the year 1900, these latches had a latch member and a keeper and a cam or lug of some kind on the latch member so that the keeper would trip the latch member if the door was shut.

The Dent Hardware Company was notified by the Sanitary Refrigerator Company to hold shipment on these refrigerator latches in dispute as the Sanitary Refrigerator Company was told by Winters, Stryker & Crampton that their patent was infringed. Wiedersheim & Fairbanks, the Dent Hardware Company's attorneys advised the Dent Hardware Company that they were manufacturing under their own patent and not infringing on Winters, Stryker & Crampton's Patent. The Dent Hardware Company so notified the Sanitary Refrigerator Company. Winters, Stryker & Crampton notified the Dent Hardware Company of [fol. 16] the existence of the patent in suit.

In the Fall of 1925, the Dent Hardware Company's attorneys notified them that their patent, then pending in the Patent Office, would be granted. The witness remembered his attention being called to lines 56 and 74, page two of Patent 1,575,647, reading as follows:

"I am aware of Patent No. 1,385,102 dated July 19th, 1921, and I disclaim the structure therein disclosed, as my invention is differentiated, since whereas the structure disclosed in said patent utilizes a pin 12 carried by the latch arm 11, which co-acts with an upper cam edge 18 of the keeper member 17; in my novel construction the upper edge of my keeper plate B3 has no function, but the pivotal latch C6 carries a cam, C1, inclined to the pivot of said latch and adapted to co-act with a pin, B8, carried by and laterally projecting from the inner wall of the keeper plate, B3, thereby to swing the terminal tongue of the latch into the horizontal locking position; and to none of the constructions of the prior art do I herein make claim."

The witness believed, in view of the foregoing quotation that he had a right to manufacture and sell these patented refrigerator latches to the Sanitary Refrigerator Company

or any other customers. He also stated that he had manufactured these refrigerator latches here in dispute, under the advice of counsel to the effect that they did not infringe any valid claims of any prior patents.

Defendant's Exhibit, Dent 1914 Latch was offered in evidence and the witness stated they were manufactured in former years in thousands and today in dozens and that the latch worked acurately and positively.

The Grand Rapids Brass Company and some of the other concerns in this same line of business, the witness said, were Keeler Brass Company, Winters, Stryker & Crampton, Arcade Manufacturing Company, Fauster, Miriam & Company, Artistic Bronze Company and Dent Hardware Company.

On Mr. Liverance's cross-examination the wtness said that the structure of the Dent Patent No. 670,506 was being manufactured to the extent of about 25% in comparison with their other output. If the handle of the Exhibit Dent 1914 Latch should accidentally fall across the door opening when the door is open that would cause it not to close. The witness had never read the Winters & Crampton patent in suit but stated that the matter from line thirteen to the period in line thirty-seven of the Winters & Crampton Patent No. 1,385,102 described defendant's Exhibit Dent 1914 [fol. 17] Latch. He did not know why this latter latch was not furnished to the Sanitary Refrigerator Company. In the Latch furnished the Sanitary Refrigerator Company it made no difference whether the handle remained vertical or horizontal when closing the door and there is no possibility of the latch handle in the latch furnished the Sanitary Refrigerator Company getting in the way of the door when the door is closed. He had sold latches to the Sanitary Refrigerator Company before March 9th, 1926 but was not sure that such latches were the ones involved in this suit. He did not know whether anyone else sold the Sanitary Refrigerator Company latches of this type in the year 1925.

The Dent Hardware Company was thoroughly familiar with the Winters & Crampton latch No. 1,385,102. The Dent Company carried a large line of different kinds of samples and the buyer makes his own selection as the Sanitary Re-

frigerator Company did in this case, the witness not knowing what induced the Sanitary Company to buy this particular latch On redirect, the witness stated that the defendant's Exhibit Dent 1901 Latch conformed to the structure of Mr. Dent's 1901 Patent.

HENRY P. NEWHARD

Henry P. Newhard testified that he was sixty-three years old, resided in Fullerton, Pa., was a practical mechanic and one of the officers of the Dent Hardware Company. He had charge of production in the mechanical development of refrigerator latches at his plant and was associated with Mr. Kaiser and Mr. Dent in the early days when the Dent Hardware Company was formed, these three gentlemen having been together ever since. He was present during the taking of Mr. Kaiser's deposition and of his own knowledge knew the various facts testified to by Mr. Kaiser were true and correct. He understood the drawings of the Dent Patent No. 670,506 of 1901 and hundreds of thousands of latches were manufactured like this patent. The latch was still being manufactured but not in such large quantities as formerly. In 1901 it was the practice to mount the latch pivotally, open the door and have the keeper fastened to the jamb. Sometimes the latch has been pivoted to the jamb and the keeper has been fastened to the door, there being no serious defect in this construction. The above types of these latches are being made and sold at the present time. Thousands like the Exhibit Dent 1914 Latch have been made [fol. 18] and sold and there is no serious defect in the operation by reason of the latch being pivoted on the jamb. Anybody with any sense would stand the latch up vertical before they shut the door. Latches like the Schrader Patents which were shown Mr. Kaiser had been manufactured to the extent of hundreds of thousands; the fastener of Patent 1,265,120 being about as good a seller as any, and all of them were practical and commercial latches and his customers were satisfied with them. He remembered receiving advice from counsel that Patent No. 1,575,647 would be granted along about the Fall of 1925 and being informed that he should go ahead with this latch, the latter having

been manufactured in good faith and under the advice of counsel.

On cross-examination by Mr. Liverance he stated that the cam of defendant's patent 1,575,647 is put on to force the lever in the hook. He did not know whether or not other latches not quite like the Schrader Patent were manufactured for the Sanitary Refrigerator Company. He had never read the Winters & Crampton Patent in suit. On reading from line thirteen, column one, down to the period in line thirty-seven of the patent in suit, he stated that that substantially described the 1914 Latch which has been offered. The next question and answer were as follows:

"In the latch shown by the Schrader patent No. 1,575,647 a latch bar pivotly mounted at its end,—includes a handle, *c*5, one arm, *c*7, in a line with the handle, a cam, *c*1, projecting in right angles from the arm, *c*7, and the latch can be turned either to vertical position as shown in figure 1, or to a horizontal position as shown in figure 2 and figure 8. The strike or keeper has a base, *b*1, a post projecting outward from the base, and the base terminates in a head that is substantially triangular in shape and has a lug, *b*9, extending laterally from it When the latch is in vertical position and the door is closed the cam, *c*1, strikes against the lug and puts the handle to a closing position If the door is closed the arm, *c*7, would strike the concave edge, *b*5, flip the handle up until the arm had passed by the lower point of the head and then the arm would go into the retaining notch of the keeper That is correct?

A. Yes sir.

He did not know how far the latch bar, including the handle *c*5, and the arm, *c*7, swings, but thought it was about one quarter of a circle. On one end of its movement it will [fol. 19] be vertical on the refrigerator door and at the other end of its movement horizontal.

At this point, Counsel stipulated as follows:

"1. That the parties, Plaintiffs and Defendant, are correctly described in the first paragraph of the Bill of Complaint herein.

"2. That uncertified copies of U. S. and foreign letters patent may be offered and admitted in evidence and used with the same force and effect as if duly certified, subject, however, to correction if any errors appear therein.

"3. It is admitted by Defendant's Counsel for the purpose of this suit that the Defendant's Corporation had notice of the patent in suit prior to the filing of the Bill herein.

"4. That the objects marked 'Defendant's Exhibit—Plaintiffs' Latch' and 'Defendant's Exhibit—Defendant's Latch' correctly represent the Plaintiffs' latch structure as set forth in the patent in suit and Defendant's latch as used on refrigerators substantially as set forth in Defendant's patent No. 1,575,647, March 9, 1926.

"5. That all exhibits may be retained in the custody of the Counsel producing the same until the hearing of the cause or until required to be produced by Counsel for the opposing party."

William J. Jackson's Deposition

William J. Jackson, called as an expert for Defendant, after stating his qualifications, explained as to the terminology of the terms "keeper" and "latch" in the Plaintiffs' patent No. 1,385,102 and Defendant's patent No. 1,575,647. Reference was then made to the British patent to Downing, No. 16,566 wherein the latch is carried by the fixed part and the equivalent of the keeper by the movable part. In U. S. Patent No. 702,185 to Charles a locking latch *c* is provided with a shoulder *d* and a second shoulder *e* is pivoted to a fixed strip, the movable part of the door being provided with a keeper. In the Keil patent No. 554,448, the keeper was mounted upon a fixed element and the latch mounted upon the movable element as the door, this construction being also shown in Patents Nos. 632,009, 743,716, and Dent No. 670,506. The notch or seat in the keeper which receives the end of the latch member has been positioned on the top of the keeper as in Hadka, or on the bottom of the keeper as in Keil. In the patent to Charles

the keeper is slotted upon its top. The slot in the keeper [fol. 20] has been variously positioned, no matter whether the keeper was upon the door or upon the jamb. The Dent patent shows the slot upon the top of the keeper. The patent to Ward No. 1,250,736 shows the slot within the keeper, upon the underside. A similar arrangement of slot and keeper is shown in the Blye patent No. 1,238,876.

Prior to December 1920 a pivotally mounted latch member having one arm extending from the pivot and a handle portion extending in the opposite direction from the pivot point, with a second arm extending from the handle portion adjacent the pivot point and in a direction substantially at right angles to the first arm was old in the British patent to Downing, as shown in Figs. 1 and 2. The U. S. Charles Patent No. 702,185 shows a pivot point *b* carrying the latch, member *c* having offsets *d* and *e*, the offset *e* being arranged substantially at right angles to the offset *d*. Patent No. 1,022,872 shows a pivot point G which supports a combined lever or handle I which also takes the place of a weight, and formed integral therewith is an arm J and a forwardly extending latch or terminal F1, all being of integral structure and the arm J is substantially at right angles to the latch member or terminal F1. Gregg patent No. 871,269 also shows a pivot point having an arm extending from the point in one direction, and a second arm extending in opposed relation, and a third arm at right angles to the latch member.

The witness stated that there was no novelty in positioning a latch in the horizontal position so that when the door is shut the free end of the latch abuts under the curved bottom side of the keeper, rides downwardly and then upwardly into the notch and the keeper in view of Fritts Patent No. 632,009, and the Hadka patent No. 743,716, the notch in Hadka's keeper, however, being on the top of the keeper.

Prior to December 1920 there was no novelty in the idea of a latch member so pivoted with the handle member extending considerably to one side of the pivot point so that the handle would tend to drop by gravity into its lowest position in view of the patents to Keil; Charles; Downing; Dent; Raaths; Thorne, No. 1,127,116, Feb. 2, 1915;

and the patent No. 138,112, dated April 22, 1873 to Ambrun and Olfemann.

The witness stated that prior to December 1920 the Dent patent No. 670,506 disclosed a pivotal latch member having a lug or abutment adapted to impact against the keeper during the movement of the latch towards the keeper for the purpose of tripping the latch. The patent No. 138,-[fol. 21] 112 as well as the patents to Charles, Keil and the German patent No. 232,851 also showed this. The idea of the nose or outer end of the pivotal latch member being adapted to contact with a top or bottom curved wall of the keeper, thus to be tripped prior to engaging the top or bottom notch of the keeper was shown in the patents to Dent, Keil, the German patent and the patents to Charles, Thorne, Blye, Hadka, Ward and Fritz.

The Dent patent was assigned to the Dent Hardware Company, which has been in existence for many years. The witness had personal knowledge of a refrigerator with a latch automatically tripped or locked when the door was shut prior to December 1920.

The witness was familiar with the patent in suit and stated its salient features to be as follows:—

The latch is carried by the door and the keeper is carried by what is usually termed the jamb of the door. Taking up first the latch the structure may be said to comprise a base plate which is screwed to the door and the base plate in turn carries what is termed in the patent a post and which is designated 5. Pivotally carried by the post in an elongated, integral member made up of three parts to wit: (a) A forwardly projected arm 9 (b) A handle or lever 11, the longitudinal axis of the arm and lever being substantially one and the same; and (c) An arm 12 which is arranged substantially at right angles to the arm 9. Taking up now the keeper, it may be said to comprise a plate or base which is screwed to the door jamb and has extended therefrom what is termed in the patent a post 16, the latter terminating in a triangular shaped forwardly extending member or head 17. This head has an upper curved surface 18, a lower curved surface 19, and a cut-away portion underneath the post 16 to form a wedging cam 20.

The file-wrapper of the patent in suit discloses that claim 5, line 8, "adjacent" was substituted for "a short distance from"

The application originally contained eight claims including the following:

"7. A keeper for latches comprising a base, a post projecting outwardly from the base at the upper portion thereof, and a head to the post depending below the same and being substantially triangular in outline, having an upper and a lower outer side coming substantially to a point and an inner upwardly and inwardly inclined side, substantially as described.

[fol. 22] "The above claim was rejected for the reason that it did not "Patentably distinguish" over the following patents:

Keil 554,448 Feb. 11, 1896 (292-241).
Ward 1,250,736 Dec. 18, 1917 (292-242).

Attention was also called to the following patents:
Dent 670,506 Mar. 26, 1901 (292-241).
Hadka 743,716 Nov. 10, 1903 (and)
Blye, 1,238,876 Sept. 4, 1917 (292-242)."

The cancelled claim 7 was drawn to the keeper per se and did not include a latch. The claimed elements of the cancelled claim 7 included a base, a post which projected from the upper part of the base outwardly and a head on the post depending below the post and of substantially triangular outline. The claim also sets up that the upper and lower outer sides come substantially to a point, and that there is an inner upwardly and inwardly inclined side.

The keeper construction of the prior Dent patent No. 670,506 constitutes an answer of anticipation of Winters and Crampton original claim 7 and the witness believed that Mr. Dent was really the inventor of this construction which was also shown in the patents to Keil and Ward. The latch member of the patent in suit as defined in claim 5 thereof has a handle member with a forward extension pivotally mounted, and a right handle arm in proximity to the pivot which is substantially disclosed in the Dent patent No. 670,506 as well as the British patent to Downing, the Charles patent and the German patent.

The witness stated that claim 1 of the patent in suit was substantially met by the Dent patent for the following reasons:

Certainly if Mr. Dent does not show each and every feature as outlined in this particular part of the claim, Mr. Dent does show an equivalent structure. The door and the casing is present; the base and post with the head, the outer end of the post depending below the post and having upper and lower curved outer sides coming to a point and with an inner upwardly and inwardly inclined side are also present. This is what I shall term for the sake of convenience of the Court the first part of the claim. We now come to the latch part of the claim which is attached to the door. The latch member comprises a base, a post projected from the base, a post having an arm paralleling the base. Between these parts is pivotally mounted a latch lever extended forwardly from which is one arm having an under cam side and a handle portion extended in the opposite [fol. 23] direction from the pivot, and a third arm projected from the handle portion adjacent the pivot and being substantially at right angles to the first arm. Probably for this portion of the claim the patent to Dent No. 670,506 like the keeper is as good a reference as any. We find in the Dent patent a base attached to the door. We find an outstanding post which is the equivalent of the Winters and Crampton patent in suit and we find pivoted to such post a latch lever having a cam side; we find a handle portion extending in an opposite direction and we find an arm projecting from the handle portion at right angles to the handles which also has a camming surface. Likewise, it is believed that the patent to Keil shows an equivalent structure.

The Witness stated as regards Claim No. 2 of the patent in suit that the portion of the claim relating to the keeper is the same as stated in Claim No. 1. The latch lever portion of the claim brings in a slightly different function, since Claim No. 2 functionally brings out that the second arm is adapted to ride against the upper outer side of the keeper when the door is closed.

The references discussed in connection with Claim No. 1 are pertinent to claim No. 2 and any mechanical elements of Claim No. 2 not found in the citations are met by equivalent structures in the prior art.

Claim No. 3 of the patent in suit is a combination claim calling for a door and a casing and the keeper to be at-

tached to the casing. It calls for a latch lever pivoted to the door so as to co-operate with the keeper to hold the door closed. The balance of the claim calls in general terms for "means on the keeper," and "means on the latch lever to engage with the keeper on the outer sides thereof," whereby the lever may be swung into. engagement with the keeper at the other side thereof when the door is closed. The Dent Patent No. 670,506 is a structure equivalent to that shown in the patent in suit. The patents to Ward, Keil, Raath's No. 1,022,872, Hadka No. 743,716 and Fritts No. 632,009 are also pertinent.

Claim No. 4 calls for a door, a casing, a keeper attached to the casing and a latch lever pivotally connected to the door to engage the keeper. This claim says that when the door is moved to a closed position there is cause to swing the lever from a vertical position to a horizontal position and engage the other arm under the keeper and that there is an arm which engages with the above outer portion of [fol. 24] the keeper when the door is moved to closing position. The references previously considered, if not showing all of the elements exactly as claimed show equivalent structures.

As to Claim No. 7 the patents previously considered show the elements set forth therein. Defendant's Exhibit, Plaintiff's Latch substantially conforms with the structure of the plaintiff's patent in suit. Defendant's Exhibit, Defendant's Latch correctly represents the defendant's device. The Schrader Patent No. 1,575,647 is correctly represented in Defendant's Exhibit, Defendant's Latch with which the witness was familiar. Page two of said Schrader Patent, lines 57 to 74 inclusive, read as follows:

"I am aware of Patent No. 1,385,102, dated July 19, 1921, and I disclaim the structure therein disclosed, as my invention is differentiated therefrom, since whereas the structure disclosed in said patent utilizes a pin 12 carried by the latch arm 11, which coacts with an upper cam edge 18 of the keeper member 17; in my novel construction the upper edge of my keeper plate *b*-2 has no function, but the pivotal latch *c*-6 carriers a cam *c*-1 inclined to the pivot of said latch and adapted to coact with a pin *b*-8 carried

by and laterally projecting from, the inner wall of the keeper plate *b*-3 thereby to swing the terminal tongue of the latch into the horizontal locking position; and to none of the constructions of the prior art do I herein make claim."

The Patent Office apparently took into consideration as the chief point that the Schrader device had a cam *c*-1 inclined to the pivot of the latch which cam was adapted to coact with a laterally extended pin *b*-8 carried by and projecting from the inner wall of the keeper plate.

The file-wrapper of the Schrader Patent 1,575,647 shows that the patent examiner cited he Winters Patent No. 1,385,-102 here in suit and following the insertion of the disclaimer above quoted the Schrader Patent was issued. Defendant's Exhibit comparative drawing is explained as follows:

"British Patent No. 16.566 which is the patent to Downing previously referred to in this deposition and would say that there is present a pivotal point *p*, an operation lever or handle terminating in a catch portion, there being an arm *f*-1 adjacent the pivot point *p*, in this particular patent the lever catch is carried by a fixed element and the keeper by movable element.

The next illustration is that of the United States patent to Dent No. 670,506 previously referred to in this deposi-[fol. 25] tion which in my opinion shows a structure equivalent to the structure in the patent in suit.

The next succeeding illustration is that of Charles No. 702,185, this structure like that in the British patent shows a latch upon the fixed part and the keeper upon the movable part. Other than this construction it is believed that Charles' device is the full equivalent of the patent in suit, since the pivot point is present, the operating arm terminating in an arm or extension *d* beyond the pivot point and having another arm *e* adjacent a pivot point.

Taking up now patent 871,269 to Gregg, the pivot point is present, the handle portion and a forwardly projecting nose and a second nose at right angles to the pivot point is shown in this sketch, and the nose or extension 14 is arranged at right angles to the pivot point. The locking attachment is shown as being secured to a swinging door.

Taking up now patent to Raaths, No. 1,022,872 this sketch shows the pivot point, and operating lever which is weighted to gravitate to a horizontal position which arm or lever terminates in a forwardly projecting nose to engage a keeper and the arm or lever is provided with a member *j* which is arranged substantially at right angles to the longitudinal axis of the operating lever.

Referring now to the patent to Kiekert, No. 232,851 which is a German patent it is submitted that the pivot point is present, the operating lever is present extending from which is a keeper engaging nose and a second nose or arm is present substantially at right angles to the longest axis of the operating lever and nose.

Referring now to the sketch portraying drawing in patent No. 138,112 the structure there is a pivot point, a lever or handle B having an arm *b* substantially at right angles to the arm B and having extending beyond the lever B another arm or extension. The lever B is pivoted between the posts *c*. The reference numeral D in effect represents the jamb of the door.

The next succeeding sketch shows the structure of the patent in suit which has been fully described.

The next succeeding sketch is that of defendant's patent to wit, the Schrader patent and it is believed that this particular structure has been so fully set forth that further description would be superfluous."

"Claim 1 in line 99 of page 2 of patent No. 1,385,102 calls for an arm projecting from the handle portion a distance from the pivot and lying substantially at Right Angles To [fol. 26] The First Arm (mine). Thus, if we examine defendant's Exhibit Plaintiff's Latch in connection with the patent in suit we find in the Exhibit that the part designated 12 in the patent is as clearly shown in the model or Exhibit substantially at right angles to the projected or nose portion 9 of the operating lever 11. The function of the part 12 is that of riding over the inclined surfaces 18 of the keeper when the latch is in vertical position so as to throw the latch into horizontal or locking position. Taking up now defendant's exhibit Defendant's Latch in connection with the Schrader patent No. 1,575,647 we do not find this structure, but on the contrary do find that the operating lever and its complemental forwardly projecting nose has

formed integral therewith a cam *c*-1 termed in the Schrader patent as a riding surface which is arranged at an inclination to and forms an acute angle to the longest axis of the combined handle and forwardly projecting arm or nose. Naturally and obviously the patent in suit does not show any such structure more especially does not show the inclined inner cam surface as very plainly observed from the comparison of the two exhibits in question and in addition to this particular item in the latch it is to be noted that the function of this inclined member is that of coacting with a laterally extending lug or pin designates *b*8 in the Schrader patent; in other words, with a door in open position and the latch for example in a substantially vertical position closing of the door of a refrigerator or the like results in the angle member adjacent the pivot point or the handle, the hitting or abutting of said angle member against the pin *b*-8 and thereby automatically causing the latch member to assume a substantially horizontal locking position. I do not find this structure in plaintiff's latch which I find before me nor do I find this structure in the drawing of the patent in suit, nor do I find this structure recited in the specification or brought out in claim 1 of the patent in suit, therefore I would say in conclusion as regards claim 1 that the elements called for in said claim 1 cannot be found in defendant's latch.

Taking up now claim 2 I find that lines 121 to 122 inclusive of claim 2 bring out that the second arm which projects from the handle is adapted to ride against the Upper Outer Side Of The Keeper When The Door Is Closed. This means that the part designated 12 in the patent in suit in the closing of the door rides from the upper edge of the keeper which is designated in the patent in suit as at 18. In other words, if His Honor will take defendant's exhibit plaintiff's [fol. 27] latch, open the door and place the latch portion in vertical position and then slam the door shut he will see that the part 12 in the patent in suit rides over the part 18 in the patent in suit. If His Honor will then pick up defendant's exhibit defendant's latch, open the door and place the latch in vertical position and slam it he will see that the inclined member adjacent the pivot point of the latch never contacts with the upper part of the keeper but on the contrary engages and slides over the laterally extended pin

or lug formed integral with the keeper. Thus it is quite evident that defendant has a different mechanical structure from that disclosed in claim 2 of the patent in suit.

Taking up now claim 3 it is found in line 4 of page 3 of the patent in suit that this claim calls for means on the latch lever to engage with the keeper The Outer Sides thereof to swing the lever into engagement with the keeper at the inner side thereof when the door is closed. The elements brought out in this claim are practically no different from the elements brought out in claim 2 since in claim 2 the phraseology was The Upper Outer Side Of The Keeper and in claim 3 the only difference is that instead of saying the upper outer side of the keeper the terms employed are The Outer Sides. As clearly explained to the Court with regard to claim 2 there is nothing in defendant's structure which by any stretch of the imagination can be said to bring out a device in which there is means upon the latch lever to engage with the keeper upon the outer sides thereof. Defendant's entire structure is so arranged that the locking movement is procured by elements that in no sense of the word ride upon the top or outer sides of the keeper.

Taking up now claim 4 of the patent in suit and referring more particularly to lines 16 and 20 it is found that the claim particularly brings out that the keeper of the patent in suit has separate distinct outer portions and that one arm engages An Outer Portion And The Other Arm Engages Different Outer Portions. I do not find in defendant's exhibit defendant's latch any of the elements thus called for. I do not find that the arm or projection (or whatever term may be given to it) which is adjacent the pivot point of the latch, engages with and rides over, abuts or in any way contacts with the Outer Portion Of The Keeper.

Referring now to claim 7 it is urged that this claim to all intents and purposes is no different from the previously diagnosed claims and in line 52 it is found that the keeper is formed At Its Outer Sides for engagement, with a pair [fol. 28] of arms. In defendant's structure there are no elements which by any stretch of the imagination can be said to include a pair of arms for engaging the outer sides of the keeper."

The witness on being referred to Defendant's Exhibit, Defendant's Latch, pointed out that when defendant's latch is swung from its horizontal locking position forwardly the oblique cam near the pin rides upon the contiguous juxtaposed pin projecting laterally from defendant's keeper and tends initially to open defendant's door and stated that he did not find this construction in the plaintiff's patent in suit and that this construction was not disclosed in plaintiff's latch. At this point defendant's counsel offered in evidence all the patents, referred to by the witness during his direct deposition and the Examiner was requested to mark the same "Defendant's Exhibit" and the name and number of *of* the patent. Defendant's Counsel also offered in evidence a drawing marked "Defendant's Exhibit—Comparative Drawing." Defendant's Counsel offered in evidence two objects marked "Defendant's Exhibit—Plaintiffs' Latch" and "Defendant's Exhibit—Defendant's Latch."

Cross-examination:

On cross examination the witness stated Defendant's Exhibit, Plaintiffs' latch, was identical with the disclosure of plaintiffs' patent in suit, and the functional parts operate in the same manner. In the patent in suit beginning with the sentence in line 37, page 1, a primary object and purpose of the invention is set forth to the effect that the latch may be pivotally connected to the door and is automatically operative to engage with a retaining member or keeper fixed on the door casing when the door is closed irrespective of the vertical or horizontal position of the latch lever working as well in one case as the other. In the defendant's exhibit, defendant's latch, the same object is attained, but in a totally different manner from that shown in the patent in suit. The same mechanism in Defendant's latch which permits the latching irrespective of the position of the latch also functions to move upwardly or squeeze outwardly, as I would term it, the door of the refrigerator should the door in any — become tight through dampness. When defendant's exhibit, plaintiffs' latch, is held with the door and a jamb positioned vertical and with the latch engaging the keeper, the door being closed, when the door is opened by turning the latch about its pivot, the arm which

[fol. 29] projects from the pivotally mounted latch bar strikes against the upper concaved side of the head at the end of the keeper to pull the door open a short distance. The witness further explained the operation thus: "In plaintiffs' latch I find that the arm 12 is quite some distance removed from the pivot point so that when the arm 9 is freed from the keeper, the arm 12 is quite a long way from contacting with the surface 18 of the keeper. To bring the arm 12 in contact with the surface 18 requires the operator to move the handle all the way to vertical position which requires an extra or unnecessary movement. I admit that after all this extra effort the refrigerator door can be pried loose by having the arm 12 ride on the surface 18. In defendant's latch, Defendant's patent No. 1,575,647, the arm *c*7 does not engage the keeper but the arm *c*1 rides over the lug *b*3. In other words, simultaneously with the passing of the latch from the keeper the latch actually forces open the door for a slight distance without any effort upon the part of the person opening the door other than moving the handle." In both plaintiffs' and defendant's latches the latch part which is mounted on the door in the first instance includes the base member, an upwardly extending post and a laterally extending arm at the top of the post in both structures. A pivot point passes through the laterally extending arm and through the latch lever which is mounted between the arm and the base. The latch lever in both instances is pivotally mounted between its ends. The latch lever in each case includes a handle extending in one direction from the pivot. In plaintiffs' latch I would say that the forwardly extending arm which for the sake of illustration I would like to term a nose, is in substantial alignment with the handle but in defendant's latch I would not say that the nose was in substantial alignment because there is a marked difference between the longest axis of the handle and nose. In other words, assuming that the latch was in horizontal position I would say that the handle was in a plane above the plane of the nose. As I see the matter, defendant's latch is provided in immediate juxtaposition to the pivot point with an inclined or obliquely arranged arm. Both the inner and outer surfaces are inclined. When the latch is in horizontal position the inner, inclined surface is within I should say one-quarter of an inch of the lug

b8 on the keeper. This brings the left hand side of this particular inclined arm in vertical alignment with the vertical edge of the refrigerator door. In plaintiffs' latch I cannot find these parts. What I do find is an arm of sub- [fol. 30] stantially eliptical cross section. In other words, it looks very much like a vertical pin. This arm is quite some distance removed from the pivot point, is absolutely nowhere near the keeper, absolutely lacks the inclined or oblique member inner surface, shown in Defendant's latch; and as I see the matter, is a totally different structure, operates in an entirely different way, and as I said before, the two arms in my opinion are totally different.

On being asked if the two latch levers did not each have an arm which when the latch was in closed position extended vertically from the lever, that in plaintiffs' latch at a greater distance from the pivot than that of defendant's latch and the arm in plaintiffs' latch being longer vertically than the arm in defendant's latch, the witness replied: "I think when the term 'Arm' is applied to defendant's latch we are probably using a misnomer. I cannot reconcile the two parts you are referring to as being one and the same thing. There is not any question but what in plaintiffs' latch there is a vertical arm, but in Defendant's latch it is hard for me to say that an inclined, oblique object is vertical. Therefore, to that part of your question I would say 'no.' This inclined, oblique thing in defendant's latch extends tangently with respect to the pivot point, and in the direction of its longest dimension this inclined, oblique object is an acute angle to the plane of the door. In its narrowest dimension it may have a tendency to extend outwardly and upwardly but it is arranged at a decided inclination with respect to the handle and is arranged tangently with respect to the pivot point." On being asked if this inclined oblique member, or object, or arm of defendant should be increased in height, the latch being horizontal, the lug which projects from the keeper could be reduced in height, that is, the distance that it projects outwardly from the keeper, the witness replied: "As Defendant's latch is now made there is very little clearance between the inclined or oblique camming member carried by the handle and when the handle is thrown to its uppermost position the parts come very close together with respect to the keeper, and while it prob-

ably might be possible to extend the inclined member slightly and cut off a small fraction of the outer end of the lug any such change would have to be so infinitesimal as to almost be negative." The projecting part of the keeper in defendant's latch out from the lug, that is, the forwardly extending pointed part of the keeper and the major portion of this projecting member is necessary to the proper [fol. 31] function of defendant's latch, but so far as throwing it from a vertical to a horizontal position, it has no function, and functions only when it is desired to close the refrigerator door and the latch is in horizontal position. As to plaintiffs' claim 3, the witness stated: "I find that claim 3, and with particular reference to line 4, on page 3 of the patent in suit, calls for a particular coaction between the latch and the keeper. In other words, as I see the claim, and with particular reference to this part of the claim, the claim is limited by the phraseology 'the outer sides' so that the latch must coact with more than one of the outer sides of the keeper in order to function as called for in the last few lines of the claim, to wit, when the lever occupies either a vertical or horizontal position."

As to plaintiffs' claim 4, the witness stated: "The differences in this claim over claim 3, as I see it, is that whereas in claim 3 the term 'the outer sides' was used, in claim 4 the phraseology 'an outer portion' and further on 'a different outer portion' is used. As I see it, the outer sides in claim 3 includes more than one side, and claim 4 by using the terms 'outer portion' and 'different outer portion' bears out my theory. In so far as claim 7 is concerned it differs from claim 4 in the term 'at its outer sides' which is practically what I have outlined as to claim 3."

Upon being asked if the oblique portion, cam or arm in defendant's latch engages with the outer side of the lug which projects from the keeper in order to turn it from vertical to horizontal position, the witness replied: "The claims which I have just referred to are all drawn to and refer to the keeper and when the term 'the outer sides' is used, or the terms 'outer portion' or 'different outer portion,' the patentee meant the outer portion of the keeper. The outer portion of the keeper certainly is not that portion of the keeper which faces the edge of the refrigerator door

because this part of the keeper clearly must be the inner part of the keeper, and in Defendants' latch the lug projects from the inner part of the keeper and not the outer part of the keeper." Defendant's oblique arm contacts with the exterior surface of defendant's lug, but not with the outer sides of the keeper. The witness did not consider the striking against the outer side of the lug in defendant's device to be equivalent to plaintiffs' structure where the arm strikes the outer side of the keeper at a further distance out because the arm is positioned a further distance out. In defendant's device the lug is an integral portion of the keeper, and the part or nose of the keeper, that is, the outer point above said lug, has no function to turn the [fol. 32] lever from vertical to horizontal position in defendant's device. If that point were sawed off the part of the lug that is engaged by the oblique cam in defendant's device would not be at the outer portion of the keeper. Cutting off the forwardly projecting point of the keeper has nothing to do with the functioning of defendant's latch from vertical to horizontal position. If the lug in defendant's latch were missing obviously the defendant's latch might or might not function, but it probably would because the weight of the handle would bring it down into vertical position.

Upon being asked if Plaintiffs' and Defendant's latches were not direct mechanical equivalents, the witness answered: "(a) The two latches are mounted in similar fashion. (b) I should say that in so far as this part of the question is concerned most any refrigerator latch functions in about the same way as these two latches function, generally speaking, and the prior art is quite filled with very similar latches. (c) I answer the last part of your question in this manner: As I see Defendant's latch, and with especial reference to the parts you have just referred to in your question, that ingenuity is there shown and that the parts are not equivalent structures, and I feel confident in saying this because it is not my own personal opinion but the experts in the Patent Office who examined the patent application of Defendant, certainly must have thought that they were not equivalent structures, and granted the inventor a patent. Therefore, I reiterate that in my opinion, backed

by the Patent Office, I do not consider the parts equivalent structures."

In the British patent to Downing the arms *f'* and *f''* define a recess in which the pin A is received. In the German patent No. 232,851 the latch lever *b* is spring actuated by the spring *c*, and has an end with a cam surface to ride over the keeper *e* when the door is closed. The patent to Fritz No. 632,009 has a latch *a* pivotally mounted on a door, *x* engageable with a keeper *c* on the door casing *y*, and this liver is manually operated to open the door. The witness said that if the latch were in vertical position, slamming of the door would very likely cause the latch to engage the keeper, and believed that in any event the weight of the handle would tend to cause the latch to assume a horizontal position in the closing of the door, and certainly the slam of the door would cause it to move around its pivot point. In the latch of the Charles patent No. 702,185 the lever *c* is mounted on the door casing and the oblique members *h* and *i* on the door engage successively with the two prongs [fol. 33] *d* and *e* to turn the latch automatically from the position shown in Fig. 5 of this patent to a position where the lever will fall into the keeper 9. The witness did not know whether or not if the lever *c* were not permitted to fall beyond the position seen in Fig. 6 of the Charles patent, or a position slightly above such position, whether or not the one projection *b* and the one guide member *h* could be left off. The witness had seen the 1914 latch made by the Dent Hardware Co. having a swinging lever latch of the Charles type with a pin on the door engaging with a cam on the lever to automatically swing the lever which is mounted on the casing or cross and meeting edges of the door casing.

The arm J in the Raaths patent No. 1,022,872 is used for the purpose of pushing the gate open when the latch is operated and to unlatch the gate. The part B of the Ambrun patent No. 138,112 was a handle and that part of said handle extending to the left of the pivot when the drawing is horizontal is a fulcrum with a lever to aid in opening the door after the latch is unlocked.

The principle of the operation of the Hadka patent No. 743,716 is for the cam projection 18 to be engaged by the projecting end 8 of the latch lever and gradually turn said

projecting end 8 in a counter-lock-wise direction, referring to Fig. 1, until the part 6*x* having three sides 6*y* to be engaged by an arm of the spring 12, is turned so that one of said sides passes from the spring and another contiguous side engages with the spring.

When the construction of the patent to Blye No. 1,238,876 is operated to unlatch the door the handle at 7 is pulled outwardly, whereupon the door 13 moved from the position shown in Fig. 3 to that shown in Fig. 4, and the handle is retained by a spring pressure in its outer position. Then, when the door is closed the laterally turned end 16 of the arm 15 engages the cam on the projection 22 and automatically turns the lever back until such time as the line of force of the spring acting through the door 13 passes from one side to the other at the axis of the pivot 8.

In the Dent patent the auxiliary cam *f*3, best shown is Fig. 2, bears against the base plate of the supporting structure on which the latch lever is mounted when the latch is in lower, or vertical, or closed position.

Defendant's counsel then offered in evidence the mounted latch referred to in Mr. Kaiser's deposition, and the same was marked "Defendant's Exhibit Dent, 1901 latch."

Defendant's counsel also offered in evidence the various mounted latches referred to in the Kaiser and Newhard [fol. 34] depositions which were marked by the designations by which they were referred to in said depositions.

Redirect examination:

On re-direct the witness stated that Defendant's exhibit, Dent 1901 latch conformed to the Dent Patent No. 670,506, dated March 26, 1901. There was nothing novel in the item of the opening movement of both plaintiffs' and defendant's latches serving initially to open the door upon which the latch is mounted. The plaintiffs' keeper structure was devoid of novelty in view of the references disclosed in connection therewith and in view of the fact that the plaintiffs cancelled the claim covering the same. The plaintiffs' latch is provided with arms which are at right angles to one another and therefore must be located in the same rectalinear plane while defendant's latch has a pair of arms which are not located in a rectalinear plane, one being at an acute angle with respect to the other. The

structure defined in claim 5 of the patent in suit was found in the British patent to Downing patent No. 16,566, the German patent No. 232,851, and the U. S. Patent to Charles No. 702,185. The Patent Office held that Plaintiffs' original claim 7 which was cancelled from the application and rejected on prior patents, was old. Plaintiffs' lever construction consisting of a handle and bar member having right angled arms is also old so that the mere assembling of the two old devices broadly was not new at the time that the patent in suit was granted. The patent Examiner did not find or cite the patents collated and discussed with reference to Claim 5 of the patent in suit.

Henry P. Newhard

Henry P. Newhard, recalled, testified that in the device of Mr. Dent's earlier 1901 patent the lug on the latch rides on the top of the keeper and drops into a notch which is open at its top. Prior to the year 1920 the Dent Hardware Co. made and sold refrigerator latches wherein the lug on the latch member rode upon the bottom of the keeper and snapped into a notch on the underside thereof, as in Defendant's Exhibit Dent 1912 Latch, which was a practical, satisfactory latch and was sold in quite large numbers. There was no trouble in the latches of the Dent earlier 1901 patent and the Dent 1912 latch with the locking of the door [fol. 35] by reason of the handle catching in the way of the door opening. If the Dent 1912 latch should be in a straight, horizontal position and the door closed, the upper lug would hit an abutment of the underside of the keeper and throw the handle downwardly to a vertical position, and the underneath lug would ride in the bottom recess and lock, this handle being absolutely fool proof under all conditions.

Miles R. Newhard

Miles R. Newhard stated that he was assistant secretary of the Dent Hardware Co., having been employed by them since 1909. He had been around the factory of the

Dent Company since that time and was familiar with the various types of latches which they manufacture. He confirmed the testimony of Mr. Newhard, Sr. The Defendant's exhibit, Dent 1912 latch, was made in September, 1912, and lots of twenty-five dozen at various times, and a very large number, were sold, giving perfect satisfaction. This latch was fool proof and would lock readily, if it happened to be standing in a horizontal or vertical position. There is a demand at the present time for fasteners where the latch member is pivoted to the door jamb, as an order for one hundred and twenty-five thousand of this type has been filled for the Alaska Refrigerator Co.

Plaintiffs' Rebuttal

Basil R. Crampton, in rebuttal, testified that he was familiar with the latch offered in evidence as Dent 1901 Latch and had known of that latch for over twenty-five years as the Conroy Latch since Patrick Conroy of Philadelphia took out the original patent. The Conroy Patent 332,495 was offered in evidence. This latch was largely used but at this time three per cent would cover the amount involved in refrigerator latches today. Fifty per cent of the refrigerators made were using this Conroy Latch but defendant's Exhibit — plaintiffs' latch came out. The latch offered by defendant as Dent 1914 Latch was originally known as the Condit Fastener and is used to about the extent of eight per cent today, being used by the Alaska Refrigerator Company, McCray Refrigerator Company and the Dry-Kold Refrigerator Company. The eight per cent referred to would be in round numbers perhaps 200,000 latches. Plaintiffs had made other latches besides the swinging lever latch in suit and today are making just two [fol. 36] types of latches. Plaintiffs had made others in the past which are now off the market; one such latch was offered in evidence as Plaintiffs' Exhibit No. 3. Plaintiffs employed a catalogue to advertise their go-ds, the catalogue being marked Plaintiffs' Exhibit No. 4 and showing Plaintiffs' entire line, excepting a few little specials that it is not necessary to show in a catalogue. This cata-

logue contained a list of plaintiffs' customers on the last page. Plaintiffs offered a latch mounted on a door as plaintiffs' Exhibit No. 5 and a certified copy of the file wrapper and history of the last patent in suit as Plaintiffs' Exhibit No. 6.

Cross-examination:

The witness had been in the latch manufacturing business for a period of almost nine years, employing about 145 men, and manufactured a few kitchen cabinet latches on the principle of Plaintiffs' Exhibit No. 3, the balance being refrigerator latches. About eight per cent of the latches used were the Dent 1914 structure, there being other refrigerator latches besides these in evidence and there being other manufacturers besides the plaintiffs' and the Dent Hardware Company in this business. The witness was one of the inventors mentioned in plaintiffs' patent 1,385,102 and in the specifications thereof distinguished over the Condit Patent. At the time the patent in suit was filed, the Conroy and Condit type dominated the field.

Mr. Crampton originated the thumb portion on the lever and Mr. Winters, the automatic features which make it work automatically when you slam the door, the thumb portion of the lever being the right angle projection therefrom, and was considered an advance over the art at that time.

The two plaintiffs worked on the latch at the same time several years ago and it was very difficult to rem*me*ber just what each one did. Following a discussion between the Court and counsel and arguments by respective counsel, the Court rendered the following opinion:

The Court: Speaking of combinations and testing out identity of co-action and result, there isn't the silghtest doubt about the perfect identity of plaintiff's and defendant's devices in a legal sense. I am well satisfied to regard the Crampton patent as being an advance and as entitled to at least a range that will forbid the defendant's structure here. If upon this art it must be held that there [fol. 37] was no room for invention, it is pretty hard to reconcile the success which the plaintiff's structure has had with the attitude of the defendant, which brings in a patent of its own here, in which patent it still asserts it is in

an inventive field by introducing a slight modification over Crampton. I regard this as one of the cases in which, assuming that because of the condition of the art there may be debate upon the question of invention, the course of the plaintiffs structure in the art, the acceptance of it, can here be taken as furnishing strong support for the presumptive validity of the patent.

The plaintiff can take a decree upon that theory.

IN UNITED STATES DISTRICT COURT

ORDER APPROVING STATEMENT OF EVIDENCE

The annexed condensed statement of the evidence in the within entitled cause is hereby approved.

Dated June 27, 1927.

F. A. Geiger, District Judge.

[fol. 38] PLAINTIFF'S EXHIBIT No. 6

IN UNITED STATES DISTRICT COURT

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Department of Commerce, United States Patent Office

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the File Wrapper and Contents, in the matter of the Letters Patent of Alexander F. Winters and Basil R. Crampton, Number 1,385,102, Granted July 19, 1921, for Improvement in Latches.

In Testimony Whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the City of Washington, this fourth day of January in the year of our Lord, one thousand nine hundred and twenty-seven and of the Independence of the United States of America the one hundred and fifty-first.

Thomas E. Robertson, Commissioner of Patents. (Seal.)

Attest: D. E. Wilson, Chief of Division.

[fol. 39] 1920

Number (Series of 1915) (Ex'r's Book) 212
428891 Div. 20 73

Patent No. 1,385,102, Jul. 19, 1921.

Name: Alexander F. Winters and Basil R. Crampton, of Grand Rapids,
County of ——,
State of Michigan.
Invention: Latch.

Parts of Application Filed.

	Original	Removed
Petition,	Dec. 7, 1920	——, 191-.
Affidavit,	" ", 1920	——, 191-.
Specification,	" ", 1920	——, 191-.
Drawing 2 shts.,	" ", 1920	——, 191-.
Photo Copy,	——, 191-.	——, 191-.
First Fee, Cash, 1, $15,	Dec. 7, 1920	——, 191-.
" " Cert.,	——, 191-.	——, 191-.
Appl. filed complete	Dec. 7, 1920	——, 191-.
Examined and Passed for Issue	June 21, 1921	, 191
H. Wright,	Exr. Div. 20	Exr. Div.
Notice of Allowance	June 21, 1921	, 191
	By Commissioner.	By Commissioner.
Final Fee Cash 20	June 22, 1921	, 191
" " Cert.	, 191	, 191
Patented	Jul 19, 1921	, 191

Attorney Frank E. Liverance, Jr., Houseman Bldg., Grand Rapids, Mich.
2 Associate Attorney
(No. of Claims Allowed 7) Print Claim 1 in O. G. (Cl. 292-241)
3 Title as Allowed Latch
(In left-hand margin) Division of App., No. —, filed —— —, 191-.

[fol. 40] #2209

(Stamps:) $15— Rec'd Dec. 7, 1920, Ck. J C. C. U. S. Pat. Office. Serial No. 428,891. Paper No. 1, Application. 102. 5374.

Petition

To the Commissioner of Patents:

Your petitioners, Alexander F. Winters and Basil R. Crampton, citizens of the United States of America, residing at Grand Rapids in the County of Kent State of Michigan whose post-office address is C/o Winters & Stryker, Grand Rapids, Michigan pray that Letters Patent may be granted to them for improvement in Latch as set forth in the annexed specification.

And they hereby appoint Frank E. Liverance, Jr., of Grand Rapids, Michigan their Attorney with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to sign the drawings, to receive the patent, and to transact all business in the Patent Office connected therewith.

Signed at Grand Rapids, in the County of Kent and State of Michigan, this — day of ——, 1920.

Inventors' full name: Alexander F. Winters, Basil R. Crampton.

(25-cent U. S. Internal Revenue Stamp canceled.)

Specification

To all whom it may concern:

Be It Known that We, Alexander F. Winters and Basil R. Crampton,
citizens of the United States of America, residing at Grand Rapids,
in the County of Kent and State of Michigan
have invented certain new and useful improvements in

Latch* (ES);

and we do hereby declare the following to be a full, clear, and exact description of

* Matter in parenthesis inserted.

[fol. 41] the invention, such as will enable others skilled the art to which it appertains to make and use the same.

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This invention relates to a latch of the swinging lever type, particularly adapted for use on refrigerators though applicable in many other relations where a door is to be closed and held in closed position. The swinging Ex's 5. lever latch, or Amd't as it is better known, the *[Condit) [condit]† latch, is pivotally connected at one end to the door jamb or casing, allowing the door to be opened when the latch is thrown to an upper vertical position, and coming down across the meeting edges of the casing and door when swung to horizontal position, engaging with a cam member on the door to wedge the door tightly shut. This latch is a very servic* (E) able latch but is relatively hard to operate due to its attachment to the casing instead of the door, and the same is liable to drop to horizontal position in which case the door cannot be closed without first raising the lever to upper vertical position while, many times, the door is inadvertantly swung toward closed position and against the lever in its horizontal position with injury either to the lever or door or both.

In the present invention, it is a primary object and purpose to
[fol. 42] provide a latch which may be pivotally connected to the door
and which is automatically operated to engage with a retaining
member or keeper fixed on the door casing when the door is closed
irrespective of the vertical or horizontal position of the latch
lever, working as well in the one case as the other. A further
object of the invention is to construct a latch of few parts,
whereby it may be economically made and which will be durable
and efficient in service. Other objects and purposes will
appear as understanding of the invention is had from the follow-
ing description, taken in connection with the accom-panying
drawings, in which,
Fig* (ure) 1 is a front elevation showing the latch in closed
position and holding a door closed.

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Fig. 2 is a side elevation thereof.
Fig. 3 is an under plan view of the latch, the door and
adjacent portion of the casing therefor being in section.

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* Matter in parenthesis inserted.
[† Words in brackets erased in copy]

Fig. 4 is a view similar to Fig. 1 showing the door approaching closed position with the swinging lever in vertical relation to the door.

Fig. 5 is a side elevation thereof.

Fig. 6 is a front elevation showing the action on the swinging lever as the door approaches closed position after [fol. 43] said lever has been in horizontal position, and

Fig. 7 is a side view thereof.

Like reference characters refer to like parts in the different figures of the drawings.

The door 1 and the adjacent portion of the casing 2 against which the free vertical edge of the door comes in closing are shown fragmentarily, only enough being shown to disclose the attachment of the lever and keeper thereto. The lever is carrier by the door. A base 3, attached to the door by screws 4 or equivalent connecting means has an integral outstanding post 5 from which, at the outer end an arm 6 extends over and paralleling the base. The lever 7 is placed between said arm and the base and a pivot pin 8 passed through the same pivotally mounting the lever at a point between its ends. An arm 9 forming a part of the lever extends from the pivot and is adapted to cross the meeting edges of the door and casing when the door is closed and the lever is horizontal position, this arm passing under the keeper attached to the door casing. The

under side of the arm 9 is formed at an angle as indicated at 10
the purpose of which will later appear.
In the opposite direction the lever extends from the pivot and is formed into a handle 11 set out a distance from the
door to allow the passage of the fingers of the operator between

[fol. 44] 5377

it and the door. A short distance from the pivot an arm 12
is formed integral with the lever, being located substantially
at right angles to the arm 9. The under side of arm 12 when
the lever is vertically positioned is formed with a rounded
cam surface 13, as shown, the purpose of which will also
appear later.
The keeper comprises a base 14 attached to the casing 2
by screws 15 or like fastening means from which a post 16 extends
outwardly for a short distance terminating in a head 17 which
is extended downwardly for a distance below the lower edge of
the post. The head on its outer sides is formed with two curved
surfaces 18 and 19 which come to a point substantially at the
front and between the upper and lower ends of said head, while
on its inner side it is cut upwardly and inwardly at a slight
angle to the vertical, forming a wedging cam 20, as shown

The latch lever may be thrown to upper position, as shown
in Fig. 4, being stopped from going beyond such position by
engagement of the arm 9 with the lower shoulder 5ª made by post
5. It may also be carried to a horizontal position, being.
likewise stopped when it reaches such position by the upper
shoulder 5ª. When the door is moved toward closing position
with the lever vertically located, the cam side 13 of arm
[fol. 45] 12 strikes against the curved upper side 18 of lead 17, causing
the lever to be automatically swung toward the horizontal, and
bringing the arm 9 into place so as to pass under the lower
point of the keeper head so that it may engage at its outer side
against the wedging came side 20 of the head. It is apparent
that by giving the end of handle 11 o downward movement, the
door will be wedged tightly shut as the arm 9 moves upwardly
and against the incline 20. To open the door it is merely
necessary to grasp handle 11 and turn
Ex's Am'd't. it to upper position, *(thus) [this]† releasing the door, and the door may be opened at the same time
by pulling outwardly on the handle after arm 9 has disconnected

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from the keeper.
If the lever has dropped to horizontal position while

*Matter in parentheses inserted.

the door is open, the closure of the door and engagement of the
lever with the keeper is accomplished by merely swinging the
door shut, in which case as shown in Figs. 6 and 7, the arm
9 strikes with its inclined cam side 10 against the lower curved
side 19 of the head 17 of the keeper, causing the handle to be
automatically turned toward vertical position. This movement
[fol. 46] continues until the arm 9 passes by the lower point of the keeper
head 17 or, as usually occurs, the arm 12 comes into contact
with the head at the upper side 18, whereupon the lever is
actuated so as to bring the arm 9 under the depending portion
of the keeper, the same as before described when closing the
door with the lever in vertical position. In any case, the
latch lever engages with the latch keeper when the door is
closed irrespective of the position of the lever. This is a
feature of merit in the invention and one of particular value
from a practical standpoint when the latch is used on refrigerators.

This latch construction is very simple, consisting of but
three parts and a pivot pin, all of which may be readily cast
from metal or formed with proper dies from sheet metal. The
mounting of the lever on the door is of value as use of one hand

only is necessary for unlatching and drawing the door open.

The ability to close the door and latch it automatically, irrespective of the position of the latch lever insures against injury to the latch or door and also insures that the door will be latched when it is swung shut. All of these features combined in the latch structure make it one of exceptional merit..

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[fol. 47]

We claim:

1. In combination, a door and a casing therefor, a keeper attached to the casing comprising a base, an outstanding post and a head at the outer portion of the post, said head depending below the post and formed with upper and lower curved outer sides coming substantially to a point and with an inner upwardly and inwardly inclined side, a member attached to the door comprising a base, an integral outstanding post projecting from the base and a laterally extending arm at the upper end of the post paralleling the base, and a latch lever pivotally mounted between its ends between the said arm and base of said member, said lever having one arm formed with an under cam side extending from the pivot and adapted to be engaged under the depending portion of

the keeper, a handle portion extending in the opposite direction
from the pivot and another arm projecting from the handle portion
a distance from the pivot and lying substantially at right angles
to the first arm of the lever and likewise being formed with an
inner cam side, substantially as and for the purposes described.

2. In combination, a door and a casing therefor, a keeper attached to the casing including an outer head spaced
from the casing and formed with upper and lower curved outer
sides coming substantially to a point and with inner upwardly
and inwardly inclined side, a member secured to the door, and a
[fol. 48] latch lever pivotally mounted between its ends on said member,
said lever having one arm extended from the pivot adapted to
ride against the lower outer side of the keeper head when the
door is closed with the lever in horizontal position to automatically turn the lever to bring said arm back of the head, a handle
portion extending in the opposite direction from said pivot and
a second arm projecting from the handle portion at an angle to
the first arm and adapted to ride against the upper outer side
of the keeper when the door is closed with the lever positioned
vertically to throw the lever to horizontal position and automatically engage the first arm with the keeper back of said head,

substantially as described.

3. In combination with a door and casing therefor, of
a keeper attached to the casing and a latch lever pivotally
connected to the door and engag*(e)able with the keeper to hold the
door in closed position, of means on the keeper and means on
the latch lever to engage with the keeper on the outer sides
thereof to swing the lever into engagement with the keeper at the
Inner side thereof when the door is closed with the lever occupying either a vertical or a horizontal position, substantially as
described.

[fol. 49] 4. In combination with a door and casing therefor, of
a keeper attached to the casing and a latch lever pivotally
connected to the door and engag*(E)able with the keeper to hold
the door in closed position, of two arms on the latch lever
one of which is engaged with an outer portion of the keeper
when the door is moved to closing position to swing the lever
from a vertical position to a horizontal position and engage
the other arm under the keeper, and the other of which is
engaged with a different outer portion of the keeper when the

[*Words and figures enclosed in brackets erased in copy.]

door is moved to closing position and the lever is horizontal
to turn the lever upwardly toward vertical position or until
said other arm passes under and engages with the keeper to
hold the door closed, substantially as described.

5. In a latch of the character described, a supporting
member adapted to be attached to a door, and a latch lever pivot-
ally mounted between its ends there on, said lever including one
arm extending from the pivot, a handle portion extending in the
opposite direction from the pivot, and a second arm extending
per A. from the handle portion* (adjacent) a short distance from† the pivot and in
a direction substantially at right angles to the first arm,
substantially as described.

6. A latch containing the elements in combination defined
in claim 5, said arms on their inner sides being
[fol. 50] formed with cam
surfaces, substantially as described.

—6—

428891
7
5381

Per A.

---

7. A keeper for latches comprising a base, a post projecting outwardly from the base at the
upper portion thereof,
Keil,
Ward.
and a head to the post depending below the same and being substan-

*Matter in parentheses inserted.

tially triangular in outline, having an upper and a lower outer
side coming substantially to a point and an inner upwardly and
inwardly inclined side, substantially as described.

[Matter enclosed between rules erased in copy.]

*(7).) [8]† In combination, a door and a casing therefor, a keeper
attached to the casing, a latch lever pivotally mounted on the
door between its ends, one end of the lever being formed into
an operating handle and the other into a keeper en-engaging arm, a
second arm projecting from the handle portion of the lever a short
distance from its pivot and at an angle to the first arm, said
keeper being formed at its outer sides for engagement with the
respective arms when the lever is in horizontal and vertical
positions, respectively, as the door is closed, to automatically
operate the lever so that it will engage under the keeper when
the door is entirely closed, substantially as described.

—7—

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[fol. 51] In testimony whereof we affix our signatures.
Alexander F. Winters, Basil R. Crampton.

---

*Matter in parentheses inserted.
[† Figure enclosed in brackets erased in copy.]

Oath

STATE OF MICHIGAN,
County of Kent, ss:

Alexander F. Winters and Basil R. Crampton, the above named petitioners, being duly sworn depose and say that they are citizens of the United States of America, and residents of Grand Rapids in the County of Kent and State of Michigan; that they verily believe themselves to be the original, first and joint inventors of the improvement in Latch described and claimed in the annexed specification; that they do not know, and do not believe the same was ever known or used before their invention or discovery thereof, or patented or described in any printed publication in any country before their invention or discovery thereof, or more than two years prior to this application, or in public use or on sale in the United States for more than two years prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by them or their legal representatives or assigns more than twelve months prior to this application; and that no application for patent on said improvement has been filed by them or their legal representatives or assigns in any country foreign to the United States.

Alexander F. Winters, Basil R. Crampton.

Sworn to and subscribed before me this 1st day of December 1920. George Hollery, Notary Public, Kent County, Michigan. My commission expires Aug. 12, 1924.

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[fol. 52] (Stamp:) U. S. Patent Office, Apr. 15, 1921, Mailed

2—260

Div. 20, Room 179

Paper No. 2

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

LVW.
Wms.

Department of the Interior,
United States Patent Office,
Washington, April 15, 1921.

Frank E. Liverance, Houseman Bldg., Grand Rapids, Mich.:

Please find below a communication from the Examiner in charge of the application of Alexander F. Winters and Basil R. Crampton, for Latch, filed Dec. 7, 1920, Serial No. 428,-891.

Thomas E. Robertson, Commissioner of Patents.

Claim 7 does not patentably distinguish over the following patents:

Keil, 554,448, Feb. 11, 1896 (292-241);
Ward, 1,250,736, Dec. 18, 1917 (292-242);

and is rejected.

The remaining claims appear allowable.

In amending see the following art:

Dent, 670,506, Mar. 26, 1901 (292-241);
Hadka, 743,716, Nov. 10, 1903, and
Blye, 1,238,876, Sept. 4, 1917 (292-242).

H. Wright, Exr., Div. 20.

WEW.

421891
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[fol. 53] (Stamps:) Mail Room, Jun. 13, 1921, U. S. Patent Office. Serial No. 428,891. Paper No. 3. Patent Office, Jun. 14, 1921, Division 20.

A

Div. 20, Room 179

Alexander F. Winters and Basil R. Crampton. Ser. No. 428,891. Filed Dec. 7, 1920. Latch

Hon. Commissioner of Patents, Washington, D. C.

Sir: In response to the Office action of April 15, 1921, in the above case, amendment is made as follows:

Claim 5, line 6, cancel "a short distance from" and substitute —adjacent—.

Cancel claim 7.

Remarks

The rejected claim has been cancelled, primarily as the subject matter thereof is divisional when claimed in itself, and it is the intention of the inventors to file a divisional application thereon.

The amendment to claim 5 does not change the same in substance.

An early allowance is requested in view of the fact that no examination of any kind has to be made further.

Very respectfully, Winters and Crampton, by Frank E. Liverance, Jr., Attorney.

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[fol. 54] (Stamp:) U. S. Patent Office, Jun. 21, 1921, Mailed

2—181

Div. 20

Address only The Commissioner of Patents, Washington, D. C.

Serial No. 428,891

LVW. Department of the Interior,
United States Patent Office,

Washington, June 21, 1921.

Alexander F. Winters and Basil R. Crampton.

Sir: Your Application for a patent for an Improvement in Latch filed Dec. 7, 1920, has been examined and Allowed.

The final fee, Twenty Dollars, must be paid not later than Six Months from the date of this present notice of allowance. If the final fee be not paid within that period, the patent on this application will be withheld, unless renewed with an additional fee of $15, under the provisions of Section 4897, Revised Statutes.

The office delivers patents upon the day of their date, and on which their term begins to run. The printing, photolithographing, and engrossing of the several patent parts, preparatory to final signing and sealing, will require about four weeks, and such work will not be undertaken until after payment of the necessary fee.

When you send the final fee you will also send, Distinctly and Plainly Written, the name of the Inventor, Title of Invention, and Serial Number as Above Given, Date of Allowance (which is the date of this circular), Date of Filing, and, if assigned, the Names of the Assignees.

If you desire to have the patent issue to Assignees, an assignment containing a Request to that effect, together with the Fee for recording the same, must be filed in this office on or before the date of payment of final fee.

After issue of the patent uncertified copies of the drawings and specifications may be purchased at the price of Ten Cents Each. The money should accompany the order. Postage stamps will not be received.

Final fees will Not be received from other than the appli-
[fol. 55] cant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office.

Respectfully, Thomas E. Robertson, Commissioner of Patents.

Frank E. Liverance, Jr., Houseman Bldg., Grand Rapids, Mich.

(In left-hand margin:) ☞In Remitting the Final Fee Give the Serial Number at the Head of This Notice.

(In right-hand margin:) ☞Uncertified Checks Will Not Be Accepted.

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(Stamp:) $20 Rec'd Jun. 22, 1921. J. C. C. U. S. Pat. Office

2—327

Memorandum of Fee Paid at United States Patent Office

(Be careful to give correct Serial No.)

Serial No. 428,891. June 22, 1921.
Inventor: Alexander F. Winters and Basil R. Crampton.

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Patent to be Issued to Inventors.
Name of Invention as Allowed: Latch.
Date of Payment: June 22, 1921.
Fee: Final Government Fee ($20.00).
Date of Filing: Dec. 7, 1920.
Date of Circular of Allowance: June 21, 1921.

The Commissioner of Patents will please apply the accompanying fee as indicated above.

Frank E. Liverance, Jr., Attorney.

Send Patent to Frank E. Liverance, Jr., Houseman Bldg., Grand Rapids, Mich.

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[fol. 56] 2—254

Div. 20, Room 179.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

Paper No. 4

Examiner's Amendment

Department of the Interior,
United States Patent Office,
Washington, —— —, ——.

Please find below a communication from the Examiner in charge of the application of Alexander F. Winters and Basil R. Crampton, Serial No. 428891, filed Dec. 7, 1920 for Latch.

Commissioner of Patents.

In accordance with the provisions of Order No. 2308, dated March 12, 1917, which reads in part as follows:

* * * * * * *

Obvious informalities in the application may be corrected by the examiner, but said corrections must be in the

form of an amendment, approved by the Principal Examiner in writing, placed in the file, and made a part of the record. The changes specified in the amendment will be entered by the clerk in the regular way.

* * * * * * *

The changes, hereinafter specified, are made by the examiner in the application above identified.

Should these changes not be satisfactory to the applicant, appropriate amendment may be proposed under the provision of Rule 78, provided the specification has not been printed.

The application has been amended as follows:

Page 1 line 5 change "condit" to Condit.

Page 3 line 31 change "this" to thus.

H. Wright, Exr. Div. 20.
421891
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[fol. 57] (Stamp.) Mail Room, Nov. 27, 1925, U. S. Patent Office

#5

UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF WISCONSIN

Honorable Commissioner of Patents, Washington, D. C.

SIR: In compliance with the Act of February 18, 1922 (42 Stat. L., —), you are advised that there was filed on the 23rd day of November, 1925, in this court an action, suit, or proceeding No. 1688 C. D., entitled: Name: Alexander F. Winters, et al., Plaintiff, Address: Grand Rapids, Michigan, versus Name: Sanitary Refrigerator Company, Defendant, Address: Fond du Lac, Wisconsin, brought upon the following patents:

	Patent No.	Date of Patent	Patentee
1	1,385,102	Dec. 7, 1920	Alexander F. Winters and
2	.....	.....	Basil R. Crampton,
3	.....	.....	.....
4	.....	.....	.....
5	.....	.....	.....

In the above-entitled case, on the — day of ——, 192-, the following patents have been included by —— (insert amendment, answer, cross bill, or other pleading):

	Patent No.	Date of Patent	Patentee
1	.....	.....	.....
2	.....	.....	.....
3	.....	.....	.....
4	.....	.....	.....
5	.....	.....	.....

In the above-entitled case the following decision has been rendered or decree issued: ——.

In Witness Whereof I have affixed my hand this 24th day of November, 1925, at Milwaukee, Wisconsin.

F. C. Westfahl, Jr., Clerk of said Court.

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[fol. 58] Here follows printed specifications and drawings of United States Patent No. 1,385,102. See index.)

2—421

1920

Contents

1. Application, — papers.
2. Rej., April 15, 1921.
3. Amend't A, June 13, 1921.
4. Ex'r's Amend't, —— —, ——.
5. Notice of Suit, Nov. 27, 1925.
6. to 50. ——.

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(Endorsed:) Jan. 4, 1927. #228,553/26.

(Here follows Defendant's Exhibit Comparative Drawing, marked side folio pages 59 and 60.)

5980

FOLD OUT IS TOO LARGE TO BE FILMED

No. 232851

AUGUST KIEKERT

FIG. 1.

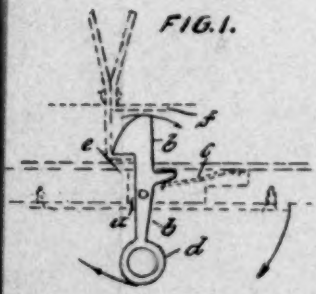

EXHIBIT
WING

DEFENDANTS PATENT.
No. 1,575,647.
AT. MARCH 9, 1926.
O. SCHRADER.

3.

FIG. 4.

[fol. 61] IN UNITED STATES DISTRICT COURT

INTERLOCUTORY DEGREE—Filed Feb. 24, 1927

The above cause coming on for hearing, on pleadings and proof of both parties and counsel for both parties having been heard, and after full consideration thereof, it is ordered, adjudged and decreed as follows:

1. That patent No. 1,385,102, issued July 19, 1921, for Latch, is a good and valid patent and defendant has infringed the same.

2. That an injunction shall issue out of and under the seal of this Court, restraining defendant, its officers, directors, confederates, agents and employees from manufacturing, selling or using, within the United States of America and its territories, any device which infringes said patent No. 1,385,102.

3. That the case be referred to Harry Kellogg, Esq., Master in Chancery of this Court, to take an account of defendant's gains and profits due to the infringement and plaintiffs' damages caused by the infringement, and report the same to the Court.

4. That plaintiffs recover their costs of suit to be taxed.

(Signed) F. A. Geiger, District Judge.

Approved as to form: John W. McMillan, Counsel for Defendant.

[File endorsement omitted]

[fol. 62] IN UNITED STATES DISTRICT COURT

PETITION FOR APPEAL, WITH SUPERSEDEAS—Filed Mar. 25, 1927

To the Honorable the Judges of the United States District Court for the Eastern District of Wisconsin:

The above named defendant, Sanitary Refrigerator Company, conceiving itself aggrieved by the decree made and entered in the above entitled cause on the 24th day of Feb-

ruary, 1927, wherein and whereby it was ordered, adjudged and decreed that the prayers of the bill of complaint herein be granted, hereby appeals from said decree of February 24th, 1927, to the United States Circuit Court of Appeals for the Seventh circuit, for the reasons specified in the assignment of errors filed herein and herewith, and prays that this appeal may be allowed; that a citation be granted directed to the above named plaintiffs, commanding them to be and appear before the United States Circuit Court of Appeals for the seventh circuit, and that a transcript of the pleadings, records, proceedings, papers and evidence upon which said decree was made, be filed with the Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.

Defendant desiring to supersede the execution of that portion of the decree awarding costs to the plaintiff, an injunction and a reference to a master pending this appeal, hereby tenders bond in such amount as the Court may require for the purpose, and prays that with the allowance of the appeal a supersedeas be granted.

Sanitary Refrigerator Company, Defendant-Appellant, by E. Hayward Jaubanto, John W. McMillan, Attorneys.

[File endorsement omitted.]

[fol. 63] In United States District Court

Assignment of Errors—Filed Mar. 25, 1927

Now comes the defendant in the above entitled case, Sanitary Refrigerator Company, and says that in the record, proceedings and decree of this Court, entered in the above entitled cause on the 24th day of February, 1927. there is manifest error in this, to-wit:

1. The court erred in sustaining the bill of complaint and ordering a decree in conformity to the prayers of the bill.

2. The court erred in holding the Winters & Crampton patent No. 1,385,102, good and valid, as to all the claims thereof.

3. The Court erred in holding the claims of said Winters & Crampton patent No. 1,385,102, aforesaid, infringed by defendant's machine.

4. The Court erred in holding and adjudging that the defendant was not at liberty to use the apparatus of the Schrader patent No. 1,575,647.

5. The Court erred in finding the equities to be with the plaintiffs and in awarding them an injunction, accounting and costs as prayed for in the bill.

Wherefore, and for the diverse other errors in the record, proceeding and decree of the Court in this cause appearing, said defendant prays that the decree entered herein on the 24th day of February, 1927, be reversed.

Sanitary Refrigerator Company, by John Wm. McMillan and E. Hayward Fairbanks, Attorneys.

[Filed endorsement omitted.]

[fol. 64] Bond on appeal for $5000.00, approved and filed March 25, 1927, omitted in printing.

[fol. 65] In United States District Court

Before Honorable Ferdinand A. Geiger, District Judge

Order Allowing Appeal, with Supersedeas—Filed March 25, 1927

Upon Motion of counsel for defendant, it is Ordered that an appeal to the United States Circuit Court of Appeals, for the Seventh Circuit, from the interlocutory decree heretofore filed and entered herein on the 24th of February, 1927, be and the same is hereby allowed, and shall act as a supersedeas, and defendant also presenting its bond in the penal sum of five thousand ($5,000.00) Dollars, the same is hereby approved both as to form and surety.

It is further

Ordered, that the record on appeal shall consist of the papers and documents specified in the præcipe accompanying this appeal, and it is also Ordered That the Clerk transmit to the Clerk of the Court of Appeals for the Seventh Circuit, all of the exhibits in this cause offered on both sides, and that a citation be issued accordingly.

By the Court:

(Signed) F. A. Geiger.

[File endorsement omitted.]

[fol. 66] In United States District Court

Stipulation as to Condensed Record—Filed June 27, 1927

It is stipulated by and between counsel that the annexed condensed record has been approved by counsel for both parties and that an Order of Court directing the filing and approval of said record and extending time of filing said record to June 29th, 1927 may be entered by either side without further notice.

Frank E. Liverance, Jr., Counsel for Plaintiffs. E. Hayward Fairbanks, Counsel for Defendant.

June 27th, 1927.

On the stipulation herein field, it is ordered that the time to settle the condensed statement of evidence on appeal and file the appeal record be enlarged to June 29th, 1927.

(Signed) F. A. Geiger, District Judge.

[File endorsement omitted.]

In United States District Court

Præcipe for Transcript of Record—Filed June 27, 1927

To the Clerk of the Court:

Please prepare a transcript of the record in the above cause for the purpose of appeal allowed therein, and include in such transcript the following records:

Pleadings and Proceedings

1. Bill of Complaint.
2. Answer.
3. Condensed Statement of Evidence and Judge's decision.

[fol. 67] 4. Decree of February 27th entered on opinion.

5. Petition for appeal.
6. Assignment of errors.
7. Order allowing appeal.
8. Citation.
9. Bond on appeal.
10. Præcipe for transcript of record.
11. Stipulation in re transmittal by Clerk of the U. S. District Court to the Court of Appeals of copy of patent in suit, prior art patents offered in evidence, and other papers.
12. Clerk's certificate.

Plaintiffs' Documentary Exhibits

Originals

Exhibit No. 1. Patent in suit.

Exhibit No. 6. File wrapper, etc. Defendant's Patent in suit.

Exhibit Unnumbered: P. J. Conroy Patent December 15, 1885, No. 332,495, United States Patent Office.

Plaintiffs' Physical Exhibits

Exhibit No. 2. Mounted Plaintiffs' device.

Exhibit No. 3. Mounted Defendant's device.

Exhibit No. 4. Catalogue Winters & Crampton Mfg. Co.

Exhibit No. 5. Defendant's Latch with a portion of the keeper sawed.

Defendant's Documentary Exhibits

Originals

Defendant's Exhibit: Ambrun & Olfermann United States Patent No. 138,112, April 22, 1873.

Defendant's Exhibit: Keil Patent, United States Patent No. 554,448, dated February 11, 1896.

Defendant's Exhibit: Fritts United States Patent No. 632,009, dated August 29, 1899.

Defendant's Exhibit: United States Patent No. 670,506, issued to Dent March 26, 1901.

Defendant's Exhibit: United States Patent No. 702,185, issued to Charles June 10, 1902.

Defendant's Exhibit: United States Patent No. 743,716, issued to Hadka November 10, 1903.

[fol. 68] Defendant's Exhibit: United States Patent No. 871,269, issued to Gregg November 19, 1907.

Defendant's Exhibit: United States Patent No. 1,022,872, issued to Raaths April 9, 1912.

Defendant's Exhibit: United States Patent No. 1,117,709, issued to Schrader November 17, 1914.

Defendant's Exhibit: United States Patent No. 1,228,727, issued to Schrader February 16, 1915.

Defendant's Exhibit: United States Patent No. 1,170,685, issued to Schrader February 8, 1916.

Defendant's Exhibit: United States Patent No. 1,238,876, issued to Blye September 4, 1917.

Defendant's Exhibit: United States Patent No. 1,250,736, issued to Ward December 18, 1917.

Defendant's Exhibit: United States Patent No. 1,265,120, issued to Schrader May 7, 1918.

Defendant's Exhibit: United States Patent No. 1,385,102, already included in Plaintiffs' Exhibit, not requested.

Defendant's Exhibit: United States Patent No. 1,507,806, issued to Schrader December 29, 1925.

Defendant's Exhibit: United States Patent No. 1,567,867, issued to Schrader December 29, 1925.

Defendant's Exhibit: United States Patent No. 1,575,647, issued to Schrader March 9, 1926.

Defendant's Exhibit: British Patent No. 16,566, issued to Downing November 14, 1891.

Defendant's Exhibit: A German Patent No. 232,851, issued to Kiekert July 31, 1910.

Defendant's Exhibit: Comparative Drawing.

Defendant's Physical Exhibits

Defendant's Exhibit: 1901 Latch.

Defendant's Exhibit: 1912 Latch mounted on door and jamb.

Defendant's Exhibit: 1914 Latch mounted on door and jamb.

Defendant's Exhibit: Plaintiffs' Device, mounted, already referred to in Physical Exhibits in Plaintiffs' testimony not duplicated here.

Defendant's Exhibit: Defendant's Device, mounted, same as referred to in Plaintiffs' Exhibits, not duplicated here.

[fols. 69 & 70] Stipulation

Counsel stipulates that the documents and exhibits specified in the foregoing præcipe shall constitute the transcript of record for the purpose of appeal and that the physical exhibits may remain in the custody of counsel until required for the hearing.

Frank E. Liverance, Jr., Louis A. French, Attorneys for Plaintiffs. E. Hayward Fairbanks, John W. McMillan, Attorneys for Defendants.

The foregoing præcipe and stipulation in reference thereto are hereby approved and are so ordered.

(Signed) F. A. Geiger, District Judge.

[File endorsement omitted.]

[fol. 71] Exhibit in Evidence

(Here follow U. S. Letters Patent marked side folio pages 72 to 160, inc.)

72 73 A. F. WINTERS AND B. R. CRAMPTON. 69

LATCH.

APPLICATION FILED DEC. 7, 1920.

1,385,102. Patented July 19, 1921.

2 SHEETS—SHEET 1.

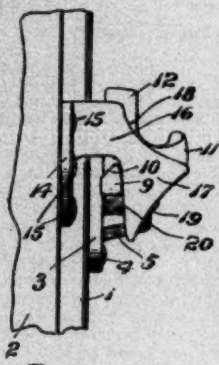

Fig. 2.

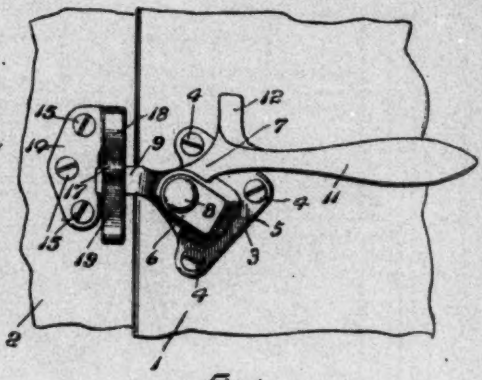

Fig. 1.

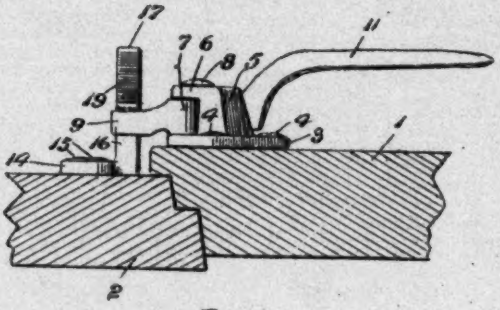

Fig. 3.

Inventors

Alexander F. Winters

Basil R. Crampton

By Frank E. Livermore, Jr.

Attorney

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A. F. WINTERS AND B. R. CRAMPTON.

LATCH.

APPLICATION FILED DEC. 7, 1920.

1,385,102.

Patented July 19, 1921.

2 SHEETS—SHEET 2.

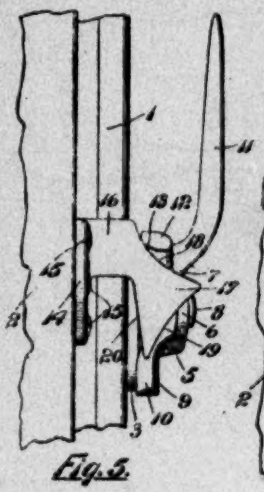


Fig. 5.

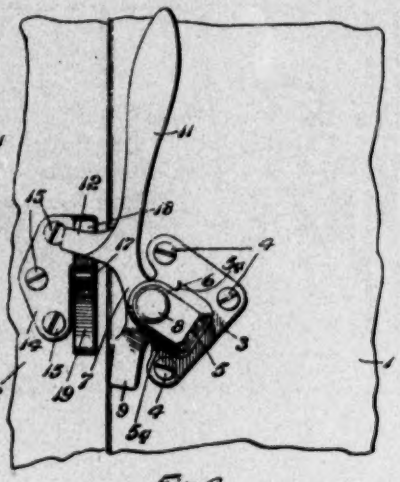


Fig. 4.

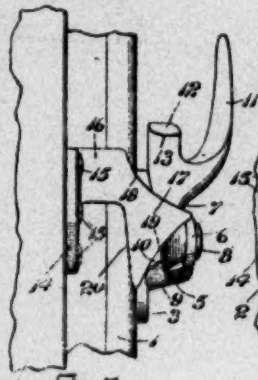


Fig. 7.

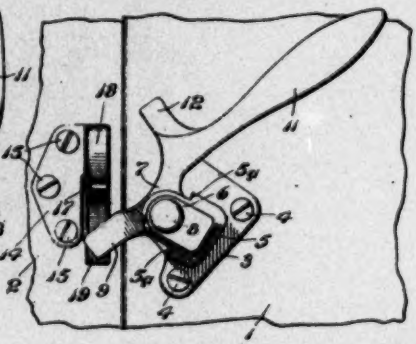


Fig. 6.

Inventors

Alexander F. Winters

Basil R. Crampton

By Frank E. Livermore Jr.

Attorney

UNITED STATES PATENT OFFICE. 75

ALEXANDER F. WINTERS AND BASIL R. CRAMPTON, OF GRAND RAPIDS, MICHIGAN.

LATCH.

1,385,102. Specification of Letters Patent. Patented July 19, 1921.

Application filed December 7, 1920. Serial No. 428,891.

To all whom it may concern:

Be it known that we, ALEXANDER F. WINTERS and BASIL R. CRAMPTON, citizens of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Latches; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a latch of the swinging lever type, particularly adapted for use on refrigerators though applicable in many other relations where a door is to be closed and held in closed position. The swinging lever latch, or as it is better known, the Condit latch, is pivotally connected at one end to the door jamb or casing, allowing the door to be opened when the latch is thrown to an upper vertical position, and coming down across the meeting edges of the casing and door when swung to horizontal position, engaging with a cam member on the door to wedge the door tightly shut. This latch is a very serviceable latch but is relatively hard to operate due to its attachment to the casing instead of the door, and the same is liable to drop to horizontal position in which case the door cannot be closed without first raising the lever to upper vertical position while, many times, the door is inadvertently swung toward closed position and against the lever in its horizontal position with injury either to the lever or door or both. In the present invention, it is a primary object and purpose to provide a latch which may be pivotally connected to the door and which is automatically operated to engage with a retaining member or keeper fixed on the door casing when the door is closed irrespective of the vertical or horizontal position of the latch lever, working as well in the one case as the other. A further object of the invention is to construct a latch of few parts, whereby it may be economically made and which will be durable and efficient in service. Other objects and purposes will appear as understanding of the invention is had from the following description, taken in connection with the accompanying drawings, in which,

Figure 1 is a front elevation showing the latch in closed position and holding a door closed.

Fig. 2 is a side elevation thereof.

Fig. 3 is an under plan view of the latch, the door and adjacent portion of the casing therefor being in section.

Fig. 4 is a view similar to Fig. 1 showing the door approaching closed position with the swinging lever in vertical relation to the door.

Fig. 5 is a side elevation thereof.

Fig. 6 is a front elevation showing the action on the swinging lever as the door approaches closed position after said lever has been in horizontal position, and

Fig. 7 is a side view thereof.

Like reference characters refer to like parts in the different figures of the drawings.

The door 1 and the adjacent portion of the casing 2 against which the free vertical edge of the door comes in closing are shown fragmentarily, only enough being shown to disclose the attachment of the lever and keeper thereto. The lever is carried by the door. A base 3, attached to the door by screws 4 or equivalent connecting means has an integral outstanding post 5 from which, at the outer end an arm 6 extends over and paralleling the base. The lever 7 is placed between said arm and the base and a pivot pin 8 passed through the same, pivotally mounting the lever at a point between its ends. An arm 9 forming a part of the lever extends from the pivot and is adapted to cross the meeting edges of the door and casing when the door is closed and the lever in horizontal position, this arm passing under the keeper attached to the door casing. The under side of the arm 9 is formed at an angle as indicated at 10 the purpose of which will later appear.

In the opposite direction the lever extends from the pivot and is formed into a handle 11 set out a distance from the door to allow the passage of the fingers of the operator between it and the door. A short distance from the pivot an arm 12 is formed integral with the lever, being located substantially at right angles to the arm 9. The under side of arm 12 when the lever is vertically positioned is formed with a rounded cam surface 13, as shown, the purpose of which will also appear later.

The keeper comprises a base 14 attached to the casing 2 by screws 15 or like fastening means from which a post 16 extends outwardly for a short distance terminating in a

head 17 which is extended downwardly for a distance below the lower edge of the post. The head on its outer sides is formed with two curved surfaces 18 and 19 which come to a point substantially at the front and between the upper and lower ends of said head, while on its inner side it is cut upwardly and inwardly at a slight angle to the vertical, forming a wedging cam 20, as shown.

The latch lever may be thrown to upper position, as shown in Fig. 4, being stopped from going beyond such position by engagement of the arm 9 with the lower shoulder 5^a made by post 5. It may also be carried to a horizontal position, being likewise stopped when it reaches such position by the upper shoulder 5^a. When the door is moved toward closing position with the lever vertically located, the cam side 13 of arm 12 strikes against the curved upper side 18 of head 17, causing the lever to be automatically swung toward the horizontal, and bringing the arm 9 into place so as to pass under the lower point of the keeper head so that it may engage at its outer side against the wedging cam side 20 of the head. It is apparent that by giving the end of handle 11 a downward movement, the door will be wedged tightly shut as the arm 9 moves upwardly and against the incline 20. To open the door it is merely necessary to grasp handle 11 and turn it to upper position, thus releasing the door, and the door may be opened at the same time by pulling outwardly on the handle after arm 9 has disconnected from the keeper.

If the lever has dropped to horizontal position while the door is open, the closure of the door and engagement of the lever with the keeper is accomplished by merely swinging the door shut, in which case, as shown in Figs. 6 and 7, the arm 9 strikes with its incline cam side 10 against the lower curved side 19 of the head 17 of the keeper, causing the handle to be automatically turned toward vertical position. This movement continues until the arm 9 passes by the lower point of the keeper head 17 or, as usually occurs, the arm 12 comes into contact with the head at the upper side 18, whereupon the lever is actuated so as to bring the arm 9 under the depending portion of the keeper, the same as before described when closing the door with the lever in vertical position. In any case, the latch lever engages with the latch keeper when the door is closed irrespective of the position of the lever. This is a feature of merit in the invention and one of particular value from a practical standpoint when the latch is used on refrigerators.

This latch construction is very simple, consisting of but three parts and a pivot pin, all of which may be readily cast from metal or formed with proper dies from sheet metal. The mounting of the lever on the door is of value as use of one hand only is necessary for unlatching and drawing the door open. The ability to close the door and latch it automatically, irrespective of the position of the latch lever insures against injury to the latch or door and also insures that the door will be latched when it is swung shut. All of these features combined in the latch structure make it one of exceptional merit.

We claim:

1. In combination, a door and a casing therefor, a keeper attached to the casing comprising a base, an outstanding post and a head at the outer portion of the post, said head depending below the post and formed with upper and lower curved outer sides coming substantially to a point and with an inner upwardly and inwardly inclined side, a member attached to the door comprising a base, an integral outstanding post projecting from the base and a laterally extending arm at the upper end of the post paralleling the base, and a latch lever pivotally mounted between its ends between the said arm and base of said member, said lever having one arm formed with an under cam side extending from the pivot and adapted to be engaged under the depending portion of the keeper, a handle portion extending in the opposite direction from the pivot and another arm projecting from the handle portion a distance from the pivot and lying substantially at right angles to the first arm of the lever and likewise being formed with an inner cam side, substantially as and for the purposes described.

2. In combination, a door and a casing therefor, a keeper attached to the casing including an outer head spaced from the casing and formed with upper and lower curved outer sides coming substantially to a point and with an inner upwardly and inwardly inclined side, a member secured to the door, and a latch lever pivotally mounted between its ends on said member, said lever having one arm extended from the pivot adapted to ride against the lower outer side of the keeper head when the door is closed with the lever in horisontal position to automatically turn the lever to bring said arm back of the head, a handle portion extending in the opposite direction from said pivot and a second arm projecting from the handle portion at an angle to the first arm and adapted to ride against the upper outer side of the keeper when the door is closed with the lever positioned vertically to throw the lever to horisontal position and automatically engage the first arm with the keeper back of said head, substantially as described.

3. In combination with a door and casing therefor, of a keeper attached to the casing and a latch lever pivotally connected to the

door and engageable with the keeper to hold the door in closed position, of means on the keeper and means on the latch lever to engage with the keeper on the outer sides thereof to swing the lever into engagement with the keeper at the inner side thereof when the door is closed with the lever occupying either a vertical or a horizontal position, substantially as described.

4. In combination with a door and casing therefor, of a keeper attached to the casing and a latch lever pivotally connected to the door and engageable with the keeper to hold the door in closed position, of two arms on the latch lever one of which is engaged with an outer portion of the keeper when the door is moved to closing position to swing the lever from a vertical position to a horizontal position and engage the other arm under the keeper, and the other of which is engaged with a different outer portion of the keeper when the door is moved to closing position and the lever is horizontal to turn the lever upwardly toward vertical position or until said other arm passes under and engages with the keeper to hold the door closed, substantially as described.

5. In a latch of the character described, a supporting member adapted to be attached to a door, and a latch lever pivotally mounted between its ends thereon, said lever including one arm extending from the pivot, a handle portion extending in the opposite direction from the pivot, and a second arm extending from the handle portion adjacent the pivot and in a direction substantially at right angles to the first arm, substantially as described.

6. A latch containing the elements in combination defined in claim 5, said arms on their inner sides being formed with cam surfaces, substantially as described.

7. In combination, a door and a casing therefor, a keeper attached to the casing, a latch lever pivotally mounted on the door between its ends, one end of the lever being formed into an operating handle and the other into a keeper engaging arm, a second arm projecting from the handle portion of the lever a short distance from its pivot and at an angle to the first arm, said keeper being formed at its outer sides for engagement with the respective arms when the lever is in horizontal and vertical positions, respectively, as the door is closed, to automatically operate the lever so that it will engage under the keeper when the door is entirely closed, substantially as described.

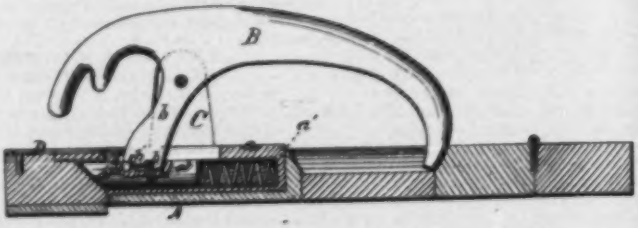
In testimony whereof we affix our signatures.

ALEXANDER F. WINTERS.
BASIL R. CRAMPTON.

J. AMBRUN & E. OLFERMANN.

Door-Latch Handles.

No. 138,112. Patented April 22, 1873.



Witnesses.

Jos. C. Hazelhurst

J. H. Hester

Inventors.

J. Ambrun & E. Olfermann

Edson Brothers

Attorneys

75

81=83

UNITED STATES PATENT OFFICE.

JULIUS AMBRUN AND ERNST OLFERMANN, OF LEAVENWORTH, KANSAS.

IMPROVEMENT IN DOOR-LATCH HANDLES.

Specification forming part of Letters Patent No. **138,112**, dated April 22, 1873; application filed March 15, 1873.

To all whom it may concern:

Be it known that we, JULIUS AMBRUN and ERNST OLFERMANN, residing in Leavenworth, in the county of Leavenworth and State of Kansas, have invented a new and useful Improvement in Door-Bolts, of which the following is a full, clear, and exact description, reference being had to the annexed drawing, in which is represented a view of our invention, with the lever in elevation and the bolt in section, the device being adjusted to a door set in a frame, which represents the upper surface of an ice-box or refrigerator.

This invention relates to that class of door-fastenings in which a sliding bolt is used; and the nature thereof consists in combining with such a bolt a lever or handle of such construction as to enable the bolt to be withdrawn from the socket or mortise in the door-jamb, and also to act as a pry to assist in opening the door, substantially as hereinafter more fully set forth.

To enable others to make and use our invention, we will proceed to describe it.

The sliding bolt A is confined within a cast-metal case, *a*, with lateral and end flanges, through which fastenings are inserted for securing the case to the door. The rear end of bolt A is pressed by a coiled spring, a^1, inclosed by the case *a*, and its upper surface is constructed with teeth a^2. B is a lever or handle, which is supplied upon its lower side with an arm, *b*, having teeth b^1, which take into the teeth a^2 of the bolt A for operating or throwing the latter inwardly. The lever B is fulcrumed upon posts or supports C, fastened to the top of the bolt-case *a* in any known way. The forward end of the lever B is caused to project or extend to a point opposite the door-jamb, and then curved or bent toward the same within a short distance thereof, as shown in the drawing. The object of this construction is to enable the lever or handle to act upon the door-jamb so as to pry the door open as the handle is grasped in unbolting the door.

This device can be used to great advantage in connection with ice-box and refrigerator doors.

To prevent the lever defacing or tearing the door-jamb in prying the door open, a metallic plate, D, is applied to the jamb. The rear arm of the lever is prolonged to enable it to be easily grasped and give it purchase.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

The combination, with the sliding bolt A, of the lever or handle B *b*, of such construction as to act upon the door-jamb and pry the door open when the bolt is thrown in or withdrawn from the jamb, substantially as specified.

In testimony whereof we have signed the foregoing specification in presence of two subscribing witnesses.

JULIUS AMBRUN.
ERNST OLFERMANN.

Witnesses:
GEORGE SCHMITH,
JOHN BAUM.

76
84

(No Model.)

P. J. CONROY.

DOOR OR SHUTTER FASTENER.

No. 332,495. Patented Dec. 15, 1885.

Fig. 1.

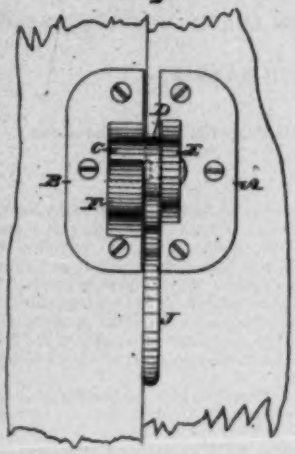


Fig. 2.

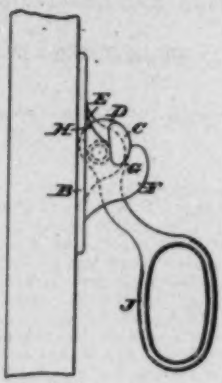
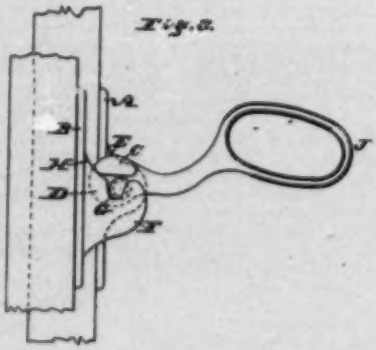


Fig. 3.



WITNESSES:

H. Rolle

H. Tuttle Jr.

INVENTOR.

P. J. Conroy

BY John A. Wiedersheim

ATTORNEY

85-87

UNITED STATES PATENT OFFICE.

PATRICK J. CONBOY, OF PHILADELPHIA, PENNSYLVANIA.

DOOR OR SHUTTER FASTENER.

SPECIFICATION forming part of Letters Patent No. 332,495, dated December 15, 1885.

Application filed April 20, 1885. Serial No. 162,842. (No model.)

To all whom it may concern:

Be it known that I, PATRICK J. CONBOY, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Door and Shutter Bolts or Fasteners, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a front view of a door or shutter bolt embodying my invention. Figs. 2 and 3 represent side views thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a door or shutter bolt, which may be tightly held in position and easily opened, as will be hereinafter fully set forth.

Referring to the drawings, A and B represent face-plates, which are attached, respectively, to a door and door-frame or to shutters, as required.

C represents a lug, which projects laterally from a head, D, and is somewhat oval in form, said head being eccentrically pivoted to a projection, E, on the face-plate A. From the face-plate B projects a catch, F, which has an opening, G, of the form of the lug C, and receives the same, and on the upper face of the catch F, back of the top of said opening, is an inclined or curved face, H, on which the lug C is adapted to ride, as will be hereinafter set forth. The head D has a handle, J, pendent therefrom, whereby it may be readily rotated.

The operation is as follows: In order to bolt the door or shutters, the handle J is moved outwardly and upwardly, whereby the lug C is raised, and is thereby permitted to pass over the front end of the catch F. Then, by lowering the handle, the lug enters the opening G, and, owing to the eccentric axis of the head D, said lug tightens against the walls of said opening, thus firmly holding the door or shutters in position. By raising the handle J the lug C, owing to the eccentric axis of the head D, emerges from the opening G in a direction upward and rearward, and then abuts against the face H of the catch, after the manner of a fulcrum, thus partly opening the door or shutters, and as the lug is now in its highest position (see Fig. 3) the door or shutters may be opened, said lug passing freely over the catch and the parts being disconnected, as is evident. This feature of the action of the lug on the face H is especially serviceable for doors, shutters, &c., that stick or open hard.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A lug projecting laterally from a head having an eccentric axis, and a keeper or catch formed with an opening to receive said lug, combined and operating substantially as and for the purpose set forth.

2. A lug projecting from a head having an eccentric axis, in combination with a keeper or catch formed with an opening to receive said lug, and a face on which said lug bears when removed from the opening of said catch, substantially as described.

PATRICK J. CONBOY.

Witnesses:
JOHN A. WIEDERSHEIM,
A. P. GRANT.

78
(No Model.)
88

H. F. KEIL.
LATCH.

No. 554,448. Patented Feb. 11, 1896.

Fig. 1.

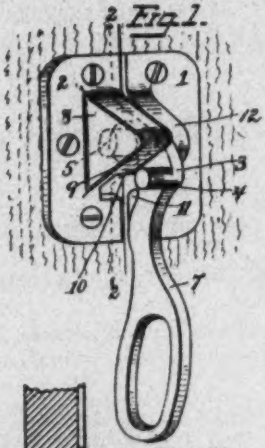


Fig. 6.

Fig. 5.

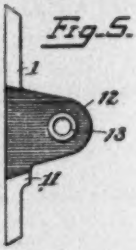


Fig. 2.

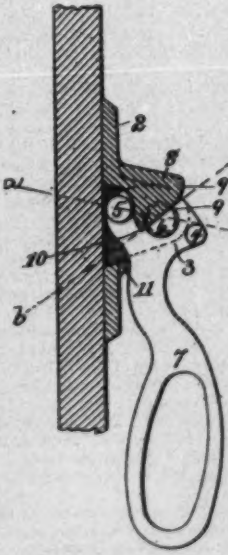


Fig. 3.

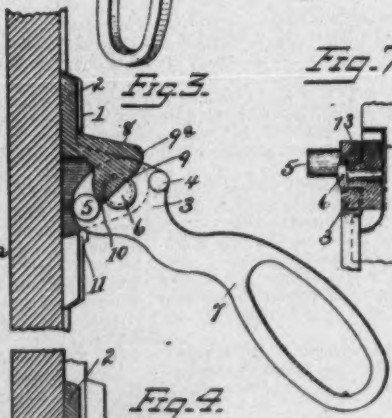


Fig. 7.

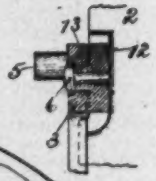
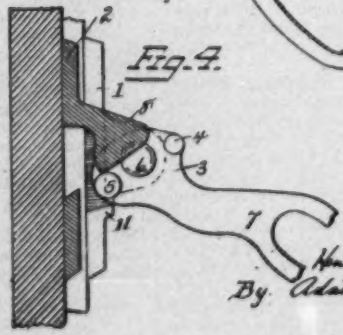


Fig. 4.



WITNESSES.
Albert Popking.
Henry C. Dewey.

INVENTOR.
Henry F. Keil
By Adam C. Schaff.
Attorney.

3537

UNITED STATES PATENT OFFICE.

HENRY FRANCIS KEIL, OF NEW YORK, N. Y.

LATCH.

SPECIFICATION forming part of Letters Patent No. 554,448, dated February 11, 1896.

Application filed November 15, 1895. Serial No. 569,092. (No model.)

To all whom it may concern:

Be it known that I, HENRY FRANCIS KEIL, a citizen of the United States of America, and a resident of New York city, in the county and State of New York, have invented a new and useful Improvement in Door Closing and Opening Devices, of which the following is a specification.

This invention relates to that class of door clamps and openers in which a lever having suitable studs to engage a keeper is utilized to force a door tightly to its seat when moved in one direction and to start or "pry" the door open when moved in the other direction, this type of invention being particularly adapted for refrigerator or other doors which require an absolutely-tight closure.

The object of my invention is to produce a simple device of the type mentioned, one which is certain in operation, of small cost, and which will both clamp and start the door in a direct horizontal plane without tendency to move the door in any direction other than that for which its hinges provide.

To this end my invention consists in the construction and combination of parts, substantially as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of the complete device as applied to a door and door-casing. Fig. 2 is a vertical section in the plane of line 2 2 of Fig. 1, the parts being shown in the position when the door is locked. Fig. 3 is a similar view when the door is about to be clamped shut, the parts having also very nearly this position when the door is to be started from its seat. Fig. 4 is a similar view when the door has been entirely released from its clamped position and is ready to be swung open on its hinges. Fig. 5 is a detail view of the plate and lug for supporting the pivot of the handle-lever. Fig. 6 is a detail view of the head of the lever carrying the pins or studs. Fig. 7 is a section through the upper end of the lever and its support.

The plate 1, adapted to be attached to the door, is provided with a stud 12, having a cylindrical bearing 13 for the head 3 of the lever 7, which is pivoted on said bearing and held thereon by a rivet or bolt 6, said lever having two studs or pins 4 and 5 projecting laterally from the head 3 on opposite sides of the pivotal point and parallel with the axis of the pivot and nearly diametrically opposite each other, the pin 5 being preferably larger than the pin 4.

The plate 2, which is adapted to be attached to the door-casing, is provided with a nosing or keeper 8 having its under face inclined, as at 9, the outer end of this incline terminating in a substantially perpendicular face at the tip 9^a. The keeper 8 at its base back of the incline 9 is undercut to form a recess for the reception of the lever-pin 5, the edge wall of this recess being preferably cam-shaped, as at 10. By "cam-shaped" I mean that the wall 10 of the recess is not concentric with the center of the pivot-pin 6 when the door is shut or nearly so.

At 11 is indicated a shoulder or stop to limit the inward movement of the lever 7, as shown most clearly in Fig. 2.

In operation, when the door is pushed inward the pin 5 rides down the incline 9 of the keeper, as indicated in Fig. 4, and automatically lifts the handle end of the lever and finally assumes about the position shown in Fig. 3. A downward and inward push on said handle causes the pin 5 to ride up over the cam 10 to the position shown in Fig. 2, and thus firmly clamps the door in its casing. When the door is to be opened, an outward pull of the handle first carries the parts back to a position where the pin 4 will engage the lower part of the substantially perpendicular face 9^a, the pin 5 being at the same time carried down below the cam 10. Further movement in this direction carries the pin 4 up over and to a slight degree along the face 9^a, and thus forces or "pries" the door outward from its seat in a direct horizontal plane. It will be understood that if the incline 9 were continued to the tip of the keeper the pin 4 would strike said incline, and the movement of the lever in an outward direction would tend to force the door downward and jam it against the sill of the casing.

In Fig. 2 the line *a a* is drawn to indicate how far I prefer to locate the pin 4 below the line of the centers of pivot 6 and pin 5, and I will now explain the reason for this location. In the first place the plane of movement of pivot 6 should be such as to intersect the incline 9 of the keeper at a point about or a little

below the center of that incline, in order that when the door is being closed the pin 5 will ride down the incline and then start up behind the keeper, and the angle of the incline should be about as shown by the line *b b* in Fig. 2, in order that the lever may automatically operate as just described. Now if the center of pin 4 was located on the line *a a* the said pin would strike the incline, when opening the door, before the pin 5 had passed down far enough to clear the lower end of the cam 10. Therefore the said pin 4 is located below the line *a a*, substantially as shown and described.

Having now described my invention, what I claim is—

In a door-latch, the combination of a keeper or hook having a substantially perpendicular face and inclining downwardly and rearwardly therefrom and provided with a recess back of said inclined portion, and a lever having a head provided with a stud 5 for engaging under the keeper in the recess thereof and a stud 4 for impinging on the said perpendicular face of the keeper, whereby the door is drawn outward directly in a line at right angles to its face and thereby prevent crowding of the door against the upper or lower part of the door-frame, said studs being parallel with the axis of the pivot of the lever.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 30th day of October, 1895.

HENRY FRANCIS KEIL.

Witnesses:
JOHN WERNER,
JAS. KATSCHE.

92

81

No. 632,009.

Patented Aug. 29, 1899.

A. D. FRITTS.

FASTENER FOR DOORS.

(Application filed June 17, 1898.)

(No Model.)

Fig. 3.

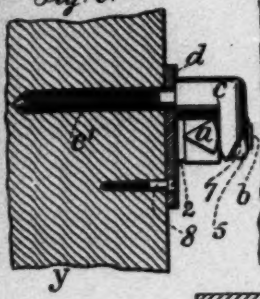


Fig. 1.

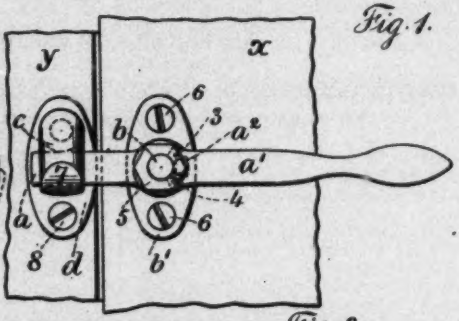


Fig. 2.

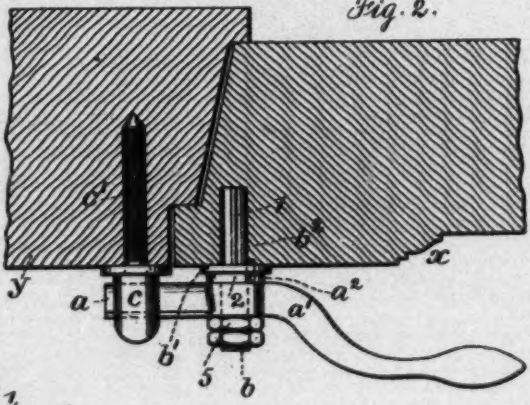


Fig. 4.

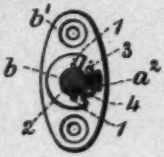
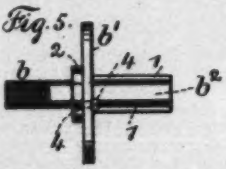


Fig. 5.



Witnesses:
J. Stair
Chas. E. Smith

Inventor:
Atwood D. Fritts
per L. W. Serrell & Son
Attys

UNITED STATES PATENT OFFICE.

ATWOOD D. FRITTS, OF HOBOKEN, NEW JERSEY.

FASTENER FOR DOORS.

SPECIFICATION forming part of Letters Patent No. 632,009, dated August 29, 1899.

Application filed June 17, 1899. Serial No. 720,884. (No model.)

To all whom it may concern:

Be it known that I, ATWOOD D. FRITTS, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented an Improvement in Fasteners for Doors, of which the following is a specification.

My invention relates to new and useful improvements in fasteners for doors, especially fasteners adapted for use upon the doors of refrigerators and ice-boxes; and the object of my invention is to so construct the parts as to make them adapted for use in either a right or left handed position, besides constructing the parts in a strong, substantial, and simple manner for use.

In carrying out my invention the latch is provided with a handle extension in line with the latch, and the latch is adapted to be used at the right hand or at the left hand, and the catch which is engaged by the latch can be used regardless of the direction in which the latch stands to the catch. The end of the latch is made with opposite inclines or triangular, so as to act against the inclined face of the catch and operate automatically in closing the door.

I provide a changeable stop for limiting the movement of the latch as the handle end of the latch descends by gravity, and this stop can be changed in its position, as said position is determined according to whether the latch is used right-handed or left-handed. I also provide means for preventing the stem of the latch turning or gradually loosening, and the catch is made with a screw-stem that is separate from the plate employed in connection therewith, the plate being secured to the wood of the refrigerator or ice-box, and the stem of the catch passing through a hole in the plate into the wood firmly secures the catch in place, so that the action of the latch in connection therewith does not disturb the catch.

The features of my improvement are more particularly hereinafter described.

In the drawings, Figure 1 is an elevation representing my improvement. Fig. 2 is a plan with the door and casing in section. Fig. 3 is a vertical section of the door-casing and partial elevation of the parts shown in Fig. 1. Fig. 4 is an elevation of the stem-plate and a section through the axis connected therewith and through the projection on the rear of the handle, and Fig. 5 is a side elevation of the parts shown in Fig. 4.

The latch a and its handle extension a' are in one continuous piece in line with each other in elevation, the handle extension being much heavier than the latch a, and the latch is preferably triangular in cross-section, with inclined faces adapted to act upon the catch as the door is closed. The latch and handle extension normally occupy a horizontal position, and they can be used either at the right hand or at the left hand with equal facility. At the rear of the latch is a projection a^3, coming adjacent to the axis b, upon which the latch is pivoted. In making the parts I prefer to make the axis b, the plate b', and the stem b^2 either integral or so permanently connected that they are practically inseparable.

The stem b^2 is provided with two ribs 1 on opposite sides, and said stem is to be driven into a hole made in the door x of the refrigerator or ice-box. These ribs prevent the stem turning accidentally. I provide a boss 2 on the face of the plate b'. This boss on one side is cut away down to the face of the plate, as shown in Fig. 4, and the plate at this point is provided with two screw-holes 3, in one of which is inserted the screw 4, the head of the screw being on the rear of the plate. The latch a upon the axis b is held by clamping-nuts δ, and the plate b' and connected parts are secured to the door x by the screws 6.

The projections a^3 on the rear of the latch comes against the screw 4 when the parts are in a horizontal position at either the right or left hand, and when the handle extension is gripped and raised and the latch a depressed the projection a^3 stops against one end of the boss 2 of the plate b', so that the movement of the handle is limited between these two points. The catch c is made with a long screw-stem c' and an inclined outer face 7, and the plate d is provided with a hole for said screw-stem and with another hole for an ordinary wood-screw 8. The parts are made thus because greater strength is thereby obtained than would be the case if the catch

was made as a part of the plate and the plate was held to the casing *y*, as usual, by two ordinary wood-screws.

It will be noticed from Figs. 1 and 2 that the inclined face 7 of the catch starts above the center line of the latch *a*. Consequently when the door is closed the angular edge of the latch *a* strikes the face of the incline and moves down the same, swinging the latch and the handle extension, and one inclined face of the latch passes beneath the lower end of the catch, and thereafter the weight of the handle extension may raise the latch up within the catch to hold the door, or force may be applied, and the curved face of the latch acts as a wedge against the catch to insure the closing of the door.

To open the door, the latch is swung on the axis *b*, the handle extension being moved as far upward as it will go, the distance being limited by the projection a^3 coming against the boss 2. In the elevated position a pull opens the door. As shown, the latch operates by the right hand. Should it be desirable to reverse the same, no change is needed in the latch and handle extension nor in the parts of the catch and its plate or in the manner of connecting the same, and the only change needed is to remove the screw 4 from the screw-hole in which it is shown and place it in the other hole and reverse the position of the parts, so as to provide for moving the projection on the latch between the screw in its new position and the other end of the boss 2, and when reversed the operation of the parts is precisely the same as has been described in connection with the position shown.

I claim as my invention—

1. In a door-fastener, the combination with the latch and the catch, of an axis for the latch, a plate and stem integral therewith, the stem having opposite ribbed edges and the plate holes for screws by which the same is secured to a door and the stem prevented from accidentally turning, substantially as set forth.

2. In a door-fastener, the combination with the catch and the latch, of an axis upon which the latch is pivoted, a stem entering the door and a plate connected to the stem and axis, and a boss upon the plate cut away upon one side down to the plate and provided with two screw-holes, a screw 4 adapted to be placed in either of said holes, and a projection upon the rear of the latch adapted to move between the screw in either position and the edge of the boss to limit the swing of the latch, substantially as set forth.

3. In a door-fastening, the combination with the catch, of a latch and a handle extension thereto in line, an axis and plate to which the latch is pivoted in either a right or left hand position, a stop upon the latch and an adjustable stop connected to the plate for limiting the movement of the latch in either position, substantially as specified.

4. In a door-fastener, the combination with a latch and gravity handle extension and an axis and stem adapted to be connected to the door and upon which the latch swings, of a plate adapted to be screwed to the casing, a catch separate from the plate and having a long screw-stem passing through a hole in the plate and adapted to enter the casing in securing the catch and the plate to the casing, substantially as set forth.

5. In a door-fastener, the combination with a latch triangular in cross-section and having inclined faces and a gravity handle extension thereto, and an axis and stem adapted to be connected to the door and upon which the latch swings, of a plate adapted to be screwed to the casing, a catch separate from the plate and having a long screw-stem passing through a hole in the plate and adapted to enter the casing in securing the catch and the plate to the casing, the said catch having an inclined face whose surface extends above the center line of the latch and upon which inclined face the latch strikes and automatically moves down the same so that the latch passes below the lower edge of the catch and rises by gravity, substantially as set forth.

Signed by me this 14th day of June, 1899.

ATWOOD D. FRITTS.

Witnesses:
GEO. T. PINCKNEY,
S. T. HAVILAND.

96

No. 670,506. Patented Mar. 26, 1901.

H. H. DENT.

LATCH.

Application filed Nov. 28, 1900.

(No Model.)

Fig. 1.

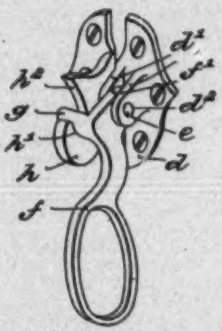


Fig. 2.

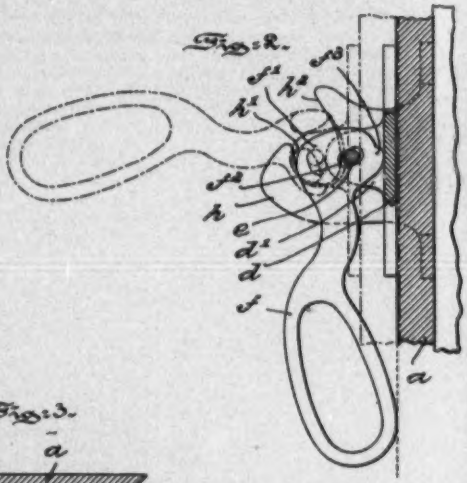


Fig. 3.

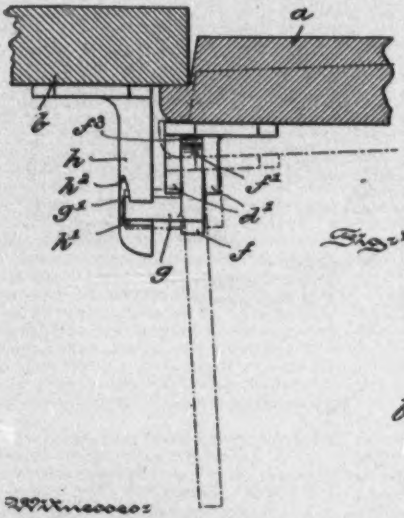
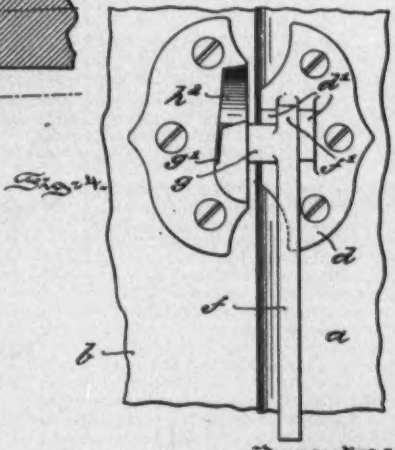


Fig. 4.



Witnesses:
Wilhelm Vogt
Thomas M. Smith.

Inventor:
Henry H. Dent,
by J. Walter Taylor
Attorney.

UNITED STATES PATENT OFFICE.

HENRY H. DENT, OF ALLENTOWN, PENNSYLVANIA, ASSIGNOR TO THE DENT HARDWARE COMPANY, OF FULLERTON, PENNSYLVANIA.

LATCH.

SPECIFICATION forming part of Letters Patent No. 670,506, dated March 26, 1901.

Application filed November 23, 1900. Serial No. 37,073. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. DENT, a citizen of the United States, residing at Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Latches, of which the following is a specification.

My invention has relation to that class of door closers and openers wherein a pivoted lever or latch is provided with a lug or stud adapted to engage in a keeper to force the door tightly shut when operated in one direction and to start the door open when moved in the opposite direction, and in such connection it relates to the construction of the lever or latch its fulcral support, and the keeper for the latch.

The principal objects of my invention are, first, to so pivot the lever or latch in the plate or seat supporting the same that in the act of clamping the door to its seat strain upon the pin or bolt forming the pivot or fulcrum is removed, and, second, to so fashion the keeper that in the opening of the door and before disengagement of the latch from the keeper the door is pried open by the movement of the latch within the keeper.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a perspective view of a latch and its keeper embodying main features of my invention, the same being disengaged from the door and the door jamb or seat. Fig. 2 is a vertical sectional view of the latch and adjacent parts, showing in full and dotted lines the operative and inoperative positions of the lever-fastener of my invention for refrigerator and other doors. Fig. 3 is a top or plan view of the latch and keeper, with the door and jamb illustrated in cross-section; and Fig. 4 is a front elevational view of Fig. 3.

Referring to the drawings, *a* represents the door, and *b* the jamb or seat. Upon the door *a* is suitably secured a plate *d*, having two projecting studs d^2, in each of which is formed an opening d^3 for the reception of a pin or bolt *e*, which forms the pivotal support or fulcrum for the latch or lever *f*. This latch or lever *f* has a cam or eccentric *f'* fitting between studs d^2 and provided with an obliquely-arranged slot f^2, through which the pin or bolt *e* passes to unite the lever or latch *f* to the plate *d*. On the inner face of the cam-plate *f'* is formed an auxiliary cam f^3, adapted as the latch or lever *f* is pressed downward to press inwardly against the base of the plate *d*, as illustrated in Fig. 2. Upon the outer portion or face of the cam *f'* is formed a laterally-projecting lug *g*, adapted to fit into a recess *g'* of the keeper *h*. The keeper *h* is provided with two oppositely-arranged wings *h'* and h^2, of which one, *h'*, is concaved to form the seat for the lug *g* and the other, h^2, is upwardly and forwardly made to project to lie in the path of the lug *g* when this lug is elevated out of the seat in the wing *h'*, as clearly illustrated in dotted lines in Fig. 2 of the drawings.

The operation of the device is simple. When the door is pushed shut, the lever *f* is depressed to force the lug *g* into the seat *g'* of the wing *h'*. When now the lever *f* is still further depressed, the cam *f'* of the lever *f* is forced inward by the weight *h'* of the keeper and by reason of the slotted connection with the pin or bolt *e* is permitted to bear directly upon the plate *d* of the door *a*. The door will thus be tightly jammed into its seat without strain upon the pivot *e* of the latch. When the door *a* is to be opened, the latch *f* is thrown upward until the lug *g* strikes upon the wing h^2, when the door will be initially pried or forced open by the impingement of the lug *g* upon the said wing. By pulling upon the lever *f* the door will then come open easily and without any oblique pressure upon the door while in its seat.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A lever or latch provided with a laterally-projecting lug and a cam on its body provided with a slot, a keeper, wherein the lug is adapted to enter, a plate provided with two studs between which the lever or latch is adapted to be pivoted, and against which plate the cam is adapted to bear, and a pin or bolt passing through the two studs and the slotted body of the lever or latch to form the

pivotal support for the lever in said plate, all arranged so that when the lug engages the keeper and the cam bears against the plate, the strain upon the pivot is relieved, substantially as and for the purposes described.

2. In a fastening device of the character described, a plate provided with two projecting studs, a lever provided with a cam or body pivoted between said studs and bearing upon said plate, said body being slotted, and a pin passing through the studs and the slot of said body to form the fulcral support for the lever in the studs, substantially as and for the purposes described.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

HENRY H. DENT.

Witnesses:
CHAS. E. SHECKLER,
ALEX. N. ULRICH.

100 = 101

No. 702,185. Patented June 10, 1902.

A. CHARLES.

LATCH.

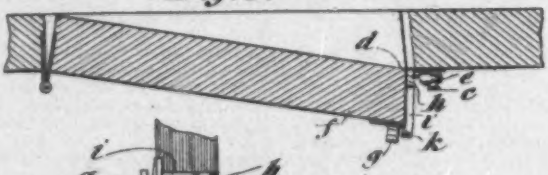
(Application filed Jan. 29, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

Fig. 2.

Fig. 3.



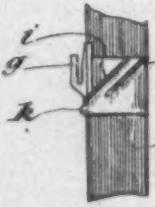


Fig 4.

Witnesses
Thomas Hillgoarth
F. Van Dusen Grinnell

Inventor
Antoine Charles
by Alexander & Co
Attorneys

102

No. 702,185. Patented June 10, 1902.

A. CHARLES.

LATCH.

(Application filed Jan. 28, 1901.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

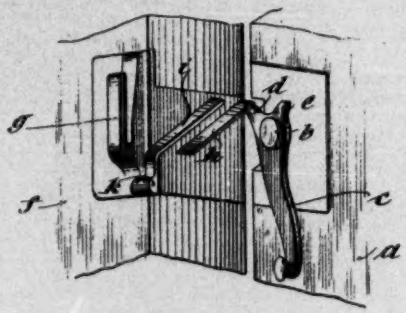


Fig. 6.

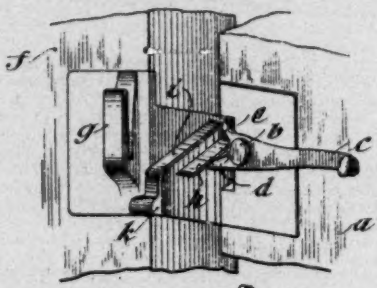
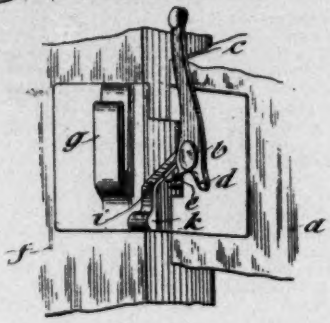


Fig. 7.



Witnesses
Thomas Kirkpatrick
H. Van Hessen-Schmidt

Inventor
Antoine Charles
by Alexander & Co
Attorneys

UNITED STATES PATENT OFFICE.

ANTOINE CHARLES, OF LIEGE, BELGIUM.

LATCH.

SPECIFICATION forming part of Letters Patent No. 702,185, dated June 10, 1902.

Application filed January 28, 1901. Serial No. 45,043. (No model.)

To all whom it may concern:

Be it known that I, ANTOINE CHARLES, engineer, a citizen of Belgium, residing at Rue Laireese No. 117, Liege, in the Kingdom of Belgium, have invented a certain new and useful Latch; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates to automatic safety-latches, and is designed especially for the doors of railway-carriages.

The object of the invention is to provide a safety-latch supported on the door-jamb cooperating with guides on the door itself, which guides are arranged to coact with projections on the latch, so that in the closing movement of the door the latch is automatically operated in a sort of screw movement and automatically engages the latch-catch on the door.

The invention consists, in brief, of a pivoted latch provided with projections engaging inclined guides on the door, the projections on the latch coming successively in contact with said inclined guides in such a manner that a rotating action is given to the pivoted latch by the successive contact of said inclined guides with the respective projections on the latch.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a front view of a portion of a door and its supporting-casing, showing the latch in closed position. Fig. 2 is a similar view showing the latch in open position. Fig. 3 is a horizontal section showing the door partially open. Fig. 4 is a detail view of the guiding-plate and latch-catch attached to the door; and Figs. 5, 6, and 7 represent in perspective the parts in various positions during the course of operation.

In the drawings, *a* represents the door-jamb, to which is attached a suitable supporting-plate, upon which is pivoted on the pin or pivot *b* the locking-latch *c*, provided with a thumb-piece, as shown. This latch has preferably arranged at one end shoulders or offsets *d e*. The door is shown at *f* and is provided on the front side with an upwardly-opening latch-catch *g*, while to the edge of the door are attached inclined guides *h* and *i*, which parts, together with the latch-catch, are preferably arranged upon a common angle-iron. A stop *k* is also provided on said door to prevent the pivoted latch *c* when in its lowest position, as shown in Figs. 2 and 5, from throwing back against the door, thus preventing the opening of the same. When the door is closed, the pivoted latch lies in the usual manner in the latch-catch *g*; but when it is desired to open the door the latch is thrown by hand about its pivot *b* to the position shown in Figs. 2 and 5 and in which the stop *k* prevents too great a swing of the pivoted latch. The position of the shoulders *d* and *e* on the latch *c* is so chosen that the shoulder *d* on opening the door (see Fig. 3) impinges on the guides *h* and *i*, and therefore with its point projects somewhat over these guides. On closing the door, therefore, the shoulder *d* will pass under the guide *h*, which position is shown in Fig. 5, and in the further closing of the door the shoulder *d* slides on the inclined guide *h*, and because of the inclination thereof the latch *c* turns on its pivot *b* until the latch finally comes into the position shown in Fig. 6. Then the shoulder *d* passes under the guide-strip *i* and, sliding on this, continues the rotation of the latch *c*, when the shoulder *d* passes out of engagement with the guide *h*, the latch finally reaching the position shown in Fig. 7, and a very small further movement of the door suffices to allow the latch *c* to fall by gravity into the latch-catch *g*.

While, therefore, the opening of the door is performed manually in the ordinary manner when the door is shut, there takes place an automatic locking by means of the above-described device.

It will be noticed that the action of the guides *h* and *i* upon the respective offsets *d* and *e* is generally like that of two screw-threads with crossed axes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An automatic safety-catch for doors, comprising a pivoted latch, a latch-catch carried by the door, and means carried by said door for successively engaging and rotating said

latch and causing it to engage the catch; substantially as described.

2. An automatic safety-latch for doors, comprising a pivoted latch having a plurality of offsets, inclined guides carried by the door with which the offsets successively respectively engage, and a latch-catch on the door; substantially as described.

3. An automatic catch for doors comprising the pivoted latch *c*, having the offsets or lugs *d*, *e*, in combination with a door provided with inclined guides *h* and *i*, with which the offsets *d*, *e*, respectively successively engage, and a latch-catch *g*; substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

A. CHARLES.

Witnesses:
J. ERWINIE,
JEN. RUSTING.

106

No. 743,716. PATENTED NOV. 10, 1903.

J. HADKA.

LATCH.

APPLICATION FILED MAR. 13, 1903.

NO MODEL.

FIG. 1.

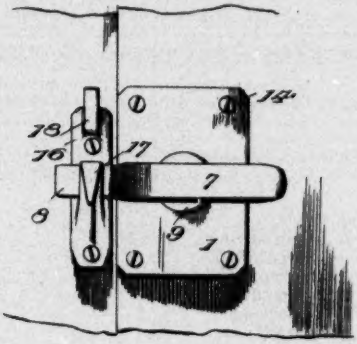


FIG. 2.

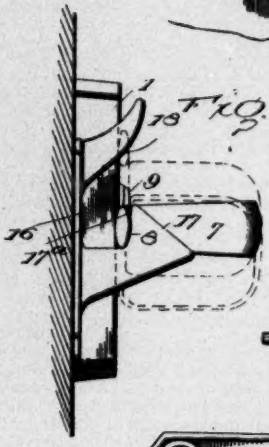


FIG. 3.

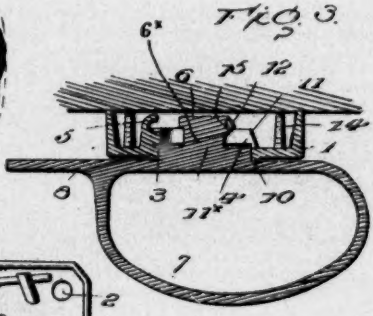
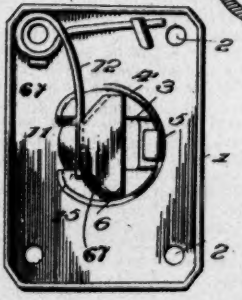


FIG. 4.



Witnesses:

Inventor

Joseph Hadka

by Benj. R. Catlin

Attorney

No. 743,716. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

JOSEPH HADKA, OF CHICAGO, ILLINOIS.

LATCH

SPECIFICATION forming part of Letters Patent No. 743,716, dated November 10, 1903.

Application filed March 13, 1903. Serial No. 147,592. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HADKA, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Door-Latches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

The invention relates to latches or fastenings for the doors of ice-boxes and the like, and has for its object to simplify the construction and insure certainty and efficiency in action.

The invention consists in the construction hereinafter particularly pointed out and described.

In the accompanying drawings, Figure 1 is a front elevation of the improved latch. Fig. 2 is a side elevation of the same. Fig. 3 is a central horizontal section. Fig. 4 is a rear elevation of the latch-case.

Numeral 1 denotes a case provided with holes 2 to receive screws or the like whereby it may be fixed to the exterior of a refrigerator, box, or other receptacle.

The case has a central circular opening 3, nearly surrounded on the interior by a flange or C-shaped boss 4, provided with a malleable lip 5, adapted to be bent into the form shown in Fig. 4, to act like a stop to an oscillating stop or cross-bar 6, fixed to a handle 7, having a latch-bar 8 and a part 9, which covers a circular boss 10 on the exterior of the case and surrounding the opening 3.

The bar 6 is integral with a journal 11^{x} and with the handle. Said journal is rotatably held in the opening or bearing 3 and is connected to the bar by a short stud 6^{x}, which has such length that the inner face of the bar 6 rides on the proximate face of the boss 4 and the part 9 of bar 6 rides on the boss 10. This stud connection is made of small diameter, so as not to obstruct the assemblage of the integrally-connected boss and case.

The C-shaped interior boss 4 has its open part 11 opposite the lip 5 to facilitate assembling the connected handle, journal, and cross-bar with the case, which is effected before the lip 5 is bent by introducing the bar 6 endwise toward and through the opening 11 in an angular direction and then moving the handle and stud so that the axis of the latter shall be in the center of the opening 3, whereupon the bar 6 can be turned to ride on the boss 4. The lip being thereupon bent, as shown, the escape of the bar and stud is prevented thereby, the bent lip also serving as a stop to limit the rotary movement of the bar in either direction. By the "angular direction" referred to is meant a line inclined to the case and passing from its front, immediately adjacent the recess 11, upwardly through opening 3 toward the lip 5, which before it is bent will not stop the advancing end of bar 6 thus introduced until its rear end can be passed through the opening 3 at a point adjacent the cut-away or open part 11 of the boss 4. When thereupon the lip 5 is bent, as illustrated, it will stop the bar 11 in case it is attempted to remove it from the opening 3 by a reverse operation. Said bent lip is also in the path of each end of the bar 6 when the latter having been assembled with the case and spring is oscillated, together with the handle, connecting-stud 11^{x}, and journal 10, the latter having a bearing in the opening 3.

12 denotes a spring held between the main flange of the case and one or more lugs and by a case-securing screw 14. Said spring bears in a groove 15 in the edge of the cross-bar 6, and the bar, shaped as shown, has three grooved bearing-faces, the groove in each being indicated by a broken line. When the spring presses on the middle one, the latch is held in a central situation, which is the operative one, behind the keeper, and when the handle is turned with the effect to turn the bar against the stop 5 the spring bears on one or the other of the outside grooved faces, and the latch is held in a raised or inoperative position. A return movement of the cross-bar and latch is aided by the spring as soon as it is moved over the dead-center at the juncture of the two grooved faces of the cross-bar.

Two grooved bearing-faces inclined to the central one (indicated by dotted lines at 6′) are provided that the latch may be applied to either a right or left hand door, only one of the inclined faces being used in any particular case.

16 denotes a keeper having an inclined face

17, whereby when the latch-bar is thrown against the same in shutting the door it is raised so that it can drop behind the catch 17ª.

18 denotes a latch-guide which when the latch is held up by the spring or by friction will under the effect of the door-closing movement force it down sufficiently to cause the spring to move beyond the dead-point and depress the latch behind the catch of the keeper. When in opening the door the latch by means of the handle is moved to its elevated position, it rides upon the latch and is thereby crowded outwardly, with the effect to loosen the door, which being customarily made as near air-tight as practicable is liable to stick. Obviously the handle adds to the certainty of this operation.

The handle, latch, and cross-bar are preferably made integral, as also are the case and malleable lip or boss. These two pieces, the keeper, and the spring—four in number—constitute the whole device, which is capable of use either with a right or left hand door, the spring actuating the latch in either use of the device.

The latch and case may be assembled and the lip 5 bent to act as a stop either at the time and place of manufacture or when the latch is required for use, the latter method having a useful relation to packing and transporting the articles in compact form.

Reversible latches have been heretofore proposed. One characteristic of my improvement in that particular is the simple construction whereby a separate fastening is dispensed with and integral latch and stop bars are operatively combined with a case and with either a right or left hand door.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a door-fastening, the case having the interior C-shaped boss 4 provided with a stop, the latch having a journal in the case, and a cross-bar connected to the journal and resting on the boss 4, said stop operating to limit the reciprocation of the bar, and said bar having a grooved face, a keeper, and a spring bearing in the groove.

2. In a door-fastening, the case having the interior C-shaped boss 4 provided with a stop, the latch having a journal in the case, and a cross-bar connected to the journal and resting on boss 4, said stop operating to limit the reciprocation of the bar, and said bar having a centrally-situated grooved face and having a second like face inclined to the first, and a spring adapted to bear on either face to hold the latch operative or inoperative.

3. In a door-fastening, the case having the interior C-shaped boss 4 provided with a stop, the latch having a journal in the case, and a cross-bar connected to the journal and resting on boss 4, said stop operating to limit the reciprocation of the bar, and said bar having a centrally-situated grooved face and having a second like face inclined to the first, a keeper, and a spring adapted to bear on either face to hold the latch operative or inoperative, and a guide to move the latch or spring over the dead-point when the door is closed.

4. In a door-fastening, the case having the interior C-shaped boss 4 provided with a stop, the latch having a journal in the case, and a cross-bar connected to the journal and resting on boss 4, said stop operating to limit the reciprocation of the bar, and said bar having a centrally-situated grooved face and having two like faces inclined to the first, a keeper, and a spring adapted to bear on either face to hold the latch operative or inoperative whether on a right or left hand door.

5. In a door-fastening, the case, the latch-bar having a journal fitting an opening in the case, a cross-bar fixed to the journal, said bars each made integral with the journal and bearing on the case, one on the interior and the other on the exterior, and a stop to limit the movement of the cross-bar.

6. In a door-fastening, the case, the latch-bar having a journal fitting an opening in the case, a cross-bar, said bars each made integral with the journal and bearing on the case, one on the interior and the other on the exterior, and a stop to limit the movement of the cross-bar, said stop being also integral with the case.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH HADKA.

Witnesses:
THOMAS C. ERNY,
GEORGE KLOPF.

94
110

No. 871,269. PATENTED NOV. 19, 1907.

J. A. GREGG.

TURN BUTTON.

APPLICATION FILED DEC. 10, 1906.

Fig 1

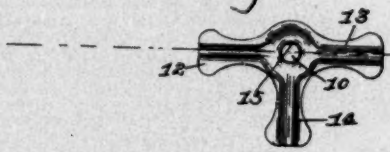


Fig 2

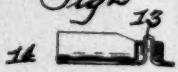
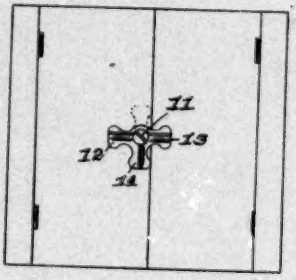


Fig 3

Fig 4



WITNESSES

Charles Willner

Leon P. Cummings

INVENTOR

John A. Gregg

By Geo. S. Fox

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN A. GREGG, OF BURLINGTON, IOWA.

TURN-BUTTON.

No. 871,269. Specification of Letters Patent. Patented Nov. 19, 1907.

Application filed December 10, 1906. Serial No. 347,192.

To all whom it may concern:

Be it known that I, JOHN A. GREGG, a citizen of the United States, residing in Burlington, county of Des Moines, and State of Iowa, have invented a new and useful Improvement in Turn-Buttons, of which the following is a specification.

The object of my invention is to provide a turn button adapted to automatically lock a cupboard or other door when the same has been closed.

A further object is to construct such a button in a simple, durable and inexpensive manner.

My invention consists of certain details of construction hereinafter set forth, pointed out in my claims and illustrated in the accompanying drawings in which

Figure I shows a front elevation of my device, Fig. II shows a side elevation, Fig. III shows a sectional view taken on the line X—X; and, Fig. IV shows my device fitted to a door.

Referring to the accompanying drawings the reference numeral 10 is used to indicate the orifice designed to receive the securing screw 11, said orifice being centrally located between three projecting arms 12, 13 and 14 respectively, the arms 12 and 13 being directly opposite to and in line with each other and the arm 14 being at right angles to each of the arms 12 and 13 and exactly located and balanced between them. The lower arm 14 may be constructed of heavier material than the arms 12 and 13 or may be weighted or may be constructed of the same material and not weighted, the object being to provide such a weight below the loose mounting as will cause the arms 12 and 13 to be in a horizontal plane and the arm 14 in a vertical plane when the turn button is resting in its normal position.

The orifice 10 is circular in conformation except for a small inwardly projecting lug 15 located centrally in the top portion of the under surface of the aperture, said lug being designed to engage the top of the screw 11 and as the said screw shank is designed to be of a less diameter than the width of the orifice 10 it is obvious that the projecting lug 15 will be the only portion of the surface of the orifice which will come into contact with the screw shaft and it is equally obvious that binding of the turn button will thus be prevented. The turn button is preferably constructed of metal with a centrally located raised portion extending longitudinally along the outer surface of each arm but different material and adifferent conformation of the arms may be employed without changing my invention the principal feature of which is the weighted under portion employed to cause the turn button to rest in its normal position with the two side arms extended in a horizontal plane. Two horizontal arms are employed in order that they may be used interchangeably and further for strengthening purposes the idle one serving to prevent the active one from being removed from screw 11, by any attempt to open the door or the like without first moving the button to proper position.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:

1. A turn button comprising a horizontal arm, a depending vertical arm, said arms being formed with an opening at the intersection of lines passed longitudinally through the center of each arm, a single inwardly projecting lug extending from the inner surface of said opening to lie in alinement with said vertical arm, and a screw to secure said button in position, said screw being of less diameter than said opening and being normally engaged at its highest point by said lug.

2. A turn button comprising a horizontal arm and a depending vertical arm arranged at right angles to the horizontal arm and central of the length thereof, said arms being formed with an opening at a point at the intersection of lines passed through the center of each arm.

JOHN A. GREGG.

Witnesses:
CHARLES WILLNER,
LEON R. CUMMINGS.

96
114

E. RAATHS.

GATE LATCH.

APPLICATION FILED OCT. 7, 1911.

1,022,872.

Patented Apr. 9, 1912.

Fig. 1.

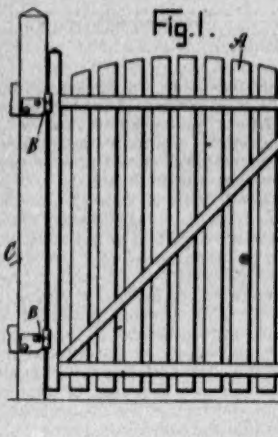


Fig. 2.

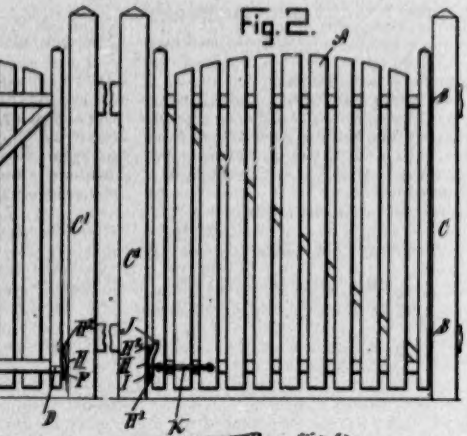
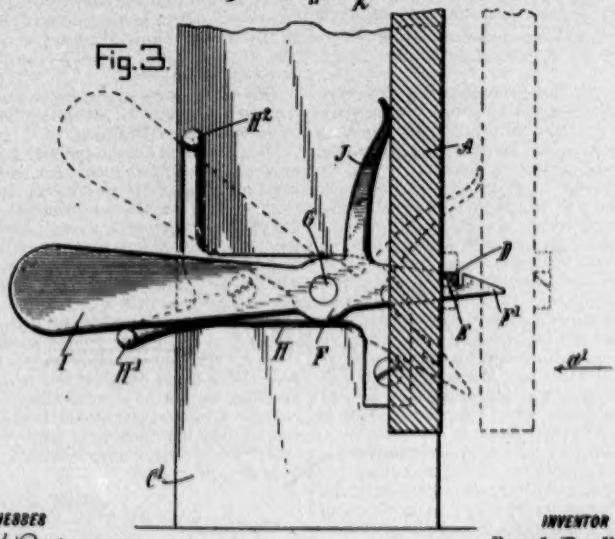


Fig. 3.



WITNESSES

C. F. Reichenbach

Rud. Hoschek

INVENTOR

Ernst Raaths

BY Munn & Co.

ATTORNEYS

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ERNEST RAATHS, OF ANGELICA, WISCONSIN, ASSIGNOR OF ONE-HALF TO ERNST H. BRAMSCHREIBER, OF ZACHOW, WISCONSIN.

GATE-LATCH.

1,022,872. Specification of Letters Patent. Patented Apr. 9, 1912.

Application filed October 7, 1911. Serial No. 653,384.

To all whom it may concern:

Be it known that I, ERNEST RAATHS, a citizen of the United States, and a resident of the town of Angelica, in the county of Shawano and State of Wisconsin, have invented a new and Improved Gate-Latch, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved gate latch arranged to permit conveniently opening or closing and locking the gate without the use of the hands, and to prevent hogs and cattle from opening the gate.

For the purpose mentioned, use is made of a latch lever fulcrumed on the gate post and having a notch for engagement with a keeper on the gate, the said latch lever also having an integral push arm adapted to engage the gate and swing the same open on imparting an opening movement to the latch lever.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a face view of one side of the gate provided with the improved gate latch; Fig. 2 is a similar view of the other face of the gate provided with the gate latch; and Fig. 3 is an enlarged transverse section of the same.

The gate A on which the improved gate latch is used is connected by hinges B to a gate post C and on the free end of the gate A and near the bottom thereof is arranged a keeper D adapted to be engaged by a notch E formed in a latch lever F extending transversely and fulcrumed on a pivot G held on a latch plate H screwed or otherwise fastened to the inner side of the gate post C' adjacent the free end of the gate A. The latch lever F is provided with a weighted arm I normally resting on a stop H' formed on the latch plate H, and the upward swinging movement of the weighted arm I is limited by a stop H^2 spaced from the stop H' and likewise forming part of the latch plate H. The latch lever F is further provided with an upwardly-extending arm J adapted to engage the face of the gate A opposite the one carrying the keeper D, so that when the gate A is in a closed position the free end of the push arm J bears against the face of the gate A, as will be readily understood by reference to Fig. 3, while the notch E is in engagement with the keeper D. A loop K is attached to the face of the gate A at the side opposite the one carrying the keeper D, the said loop being preferably located near the free end of the gate A and near the lower end thereof, as plainly indicated in Fig. 2. A person coming in the direction of the arrow a' and desiring to open the gate A needs only to press with one foot on the forwardly-projecting terminal F' of the latch lever F so as to swing the latch lever F downward and thereby disengage the notch E from the keeper D to unlock the gate. A further downward swinging movement of the latch lever F causes the push arm J to push the gate A open so that the person can walk through the opening between the gate posts. A person after passing through the open gate A engages one foot with the loop K and pulls the gate shut, it being understood that the latch lever F, after being relieved of pressure by the foot of the person as previously described, immediately swings back to normal position, as indicated in Fig. 3, and when the gate A is swung shut, as mentioned, the beveled top of the terminal F' slides under the keeper D, thus imparting a slight downward swinging motion to the lever F until the notch E registers with the keeper D, at which time the latch lever F is swung upward to its normal position by the action of the weighted arm I. The gate A is now again locked. A person coming in the inverse direction of the arrow a' lifts with his foot the weighted arm I so as to swing the latch lever F downward with a view to disengage the notch E from the keeper D and to cause the arm J to push the gate A open, as indicated in dotted lines in Fig. 3, to allow the person to walk through the open gate when in the inverse direction of the arrow a'. After having passed through the open gateway, it is only necessary for the person to give a return push to the gate A to cause the latch lever F to re-engage the keeper D in the manner above described.

From the foregoing it will be seen that the gate latch shown and described is very simple and durable in construction and composed of comparatively few parts, not liable easily to get out of order. It will also be

noticed that the gate is normally securely locked in position and cannot be opened by hogs or cattle, and a person coming in either direction can readily open the gate without the use of the hands.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination with a swing gate and gate post, of a keeper fixed on the gate, a latch plate fixed on the gate post and provided with spaced stops, a latch lever fulcrumed on the said latch plate and provided with a notch adapted to engage the said keeper, the said latch lever having a weighted arm for engagement with the said stops and the latch lever having a push arm for engagement with the gate when the notch end of the latch lever is swung downward.

2. In combination with a swing gate and gate post, of a keeper on the gate, and a latch lever fulcrumed on the gate post and having a notch for engagement with the said keeper, the said latch lever also having an integral push arm adapted to engage the gate and swing the same open on imparting an opening movement to the latch lever.

3. In combination with a swing gate and gate post, a keeper fixed on the gate, a latch plate fixed on the gate post and provided with spaced stops, a latch lever fulcrumed on the said latch plate and provided with a notch adapted to engage the said keeper, the said latch lever having a weighted arm for engagement with the said stops and the latch lever having a push arm for engagement with the gate when the notch end of the latch lever is swung downward, and a loop fixed on the said gate at the side at which the said weighted arm is arranged.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNEST RAATHS.

Witnesses:
R. C. WENLY,
J. E. LUTSEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

3537

118-119

T. O. SCHRADER.

99

LATCH FOR DOORS.

APPLICATION FILED AUG. 8, 1914.

1,117,709.

Patented Nov. 17, 1914.

2 SHEETS-SHEET 1.

FIG. 1.

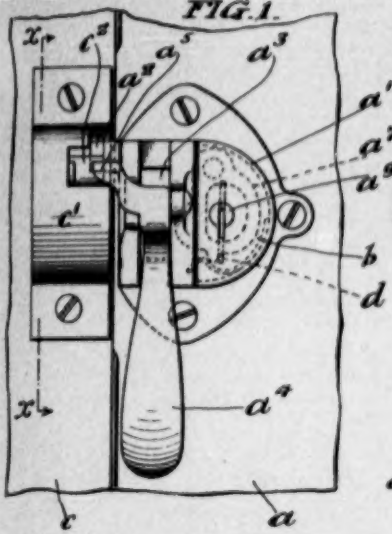


FIG. 2.

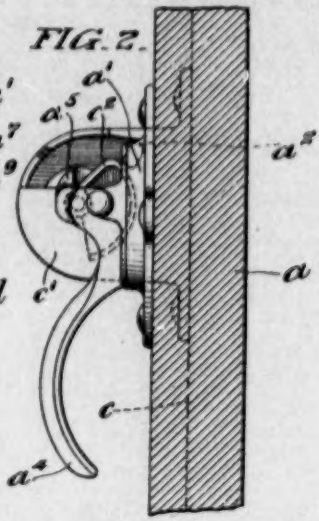
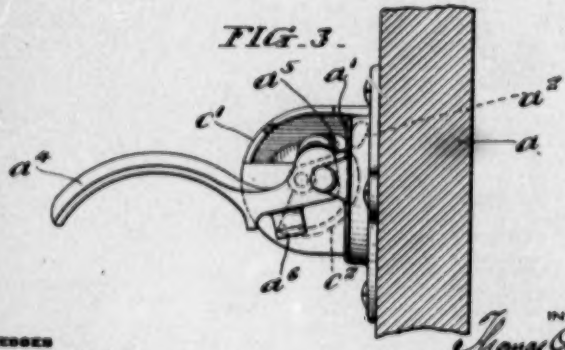


FIG. 3.



WITNESSES

Thomas M. Smith

Ray C. Smith

INVENTOR

Thomas O. Schrader,

BY

Fraser Dayton

ATTORNEY

120

T. O. SCHRADER.

LATCH FOR DOORS.

APPLICATION FILED AUG. 8, 1914.

1,117,709.

Patented Nov. 17, 1914.

2 SHEETS—SHEET 2.

FIG. 4.

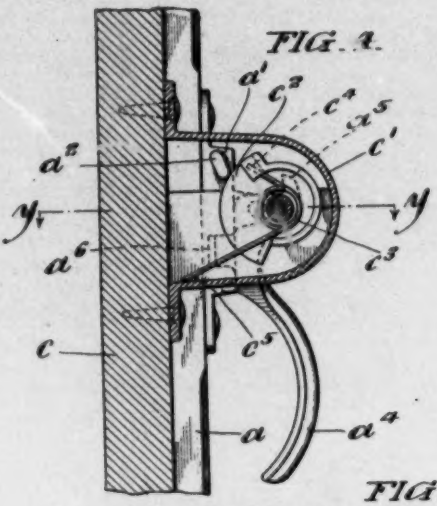


FIG. 5.

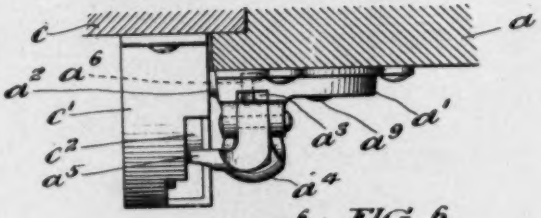
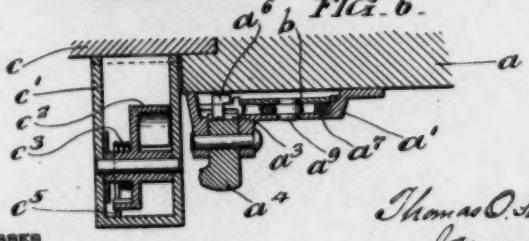


FIG. 6.



WITNESSES

Thomas M. Smith

Rose E. Smith

Thomas O. Schrader, INVENTOR

BY J. Walter Douglas

ATTORNEY

UNITED STATES PATENT OFFICE.

THOMAS O. SCHRADER, OF ALLENTOWN, PENNSYLVANIA, ASSIGNOR TO THE DENT HARDWARE COMPANY, OF FULLERTON, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

LATCH FOR DOORS.

1,117,709. Specification of Letters Patent. Patented Nov. 17, 1914.

Application filed August 8, 1914. Serial No. 855,795.

To all whom it may concern:

Be it known that I, THOMAS O. SCHRADER, a citizen of the United States, residing at Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Latches for Doors, of which the following is a specification.

My invention has relation to a latch for doors, for closing refrigerators, among other uses therefor; and in such connection it relates to the particular constructive arrangement thereof, so that slamming the door fastens the same against release until the pull-handle thereof is operated.

The nature and scope of my present invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which—

Figure 1, is a front elevational view of the latch-fastener for refrigerator and other doors, in an operative position, embodying essential main features of my said invention. Fig. 2, is a side elevational view of one of the members of the latch-fastener. Fig. 3, is a side elevational view of the pull-handle in a position to permit of release of the latch-fastener, to open the door. Fig. 4, is a vertical sectional view through the incased spring controlled shiftable cam of the latch-fastener, showing the tongue or projection of the housing for the pivotal pull-handle in an operative position and also said pull-handle in such position as to permit of the locking of the same. Fig. 5, is a top or plan view; and Fig. 6, is a transverse central sectional view through both members of the said latch-fastener.

Referring to the drawings *a*, is the door with a lock housing a^1, applied thereto and having a projection or tongue a^2. The housing is recessed at a^3, to pivotally support a pull-handle a^4, having a recessed flaring sidewise extending finger a^5, and underneath the handle it is provided with an inturned recessed foot a^6, to engage a keeper a^7, of a shiftable locking means *b*, mounted in the housing a^1. This means is provided with a key turning spindle and stud a^8, for shifting the keeper a^7, into contact with the inturned recessed foot a^6, of the pull-handle a^4, as clearly shown in Fig. 6, and while the said handle a^4, occupies a vertical depending position, for example, the position as shown in Figs. 1 and 2.

The door-jamb *c*, is provided with a side notched box-like casing c^1, for the mounting of a shiftable pivoted cam c^2, therein. This cam is provided with a coiled spring c^3 which is at one end c^4, connected with the cam and at the opposite end c^5 with the said casing c^1, as clearly shown in Fig. 4, so as to normally maintain the said cam in an operative position to be readily shifted against the tension of the spring c^3, by the tongue or projection a^2, contacting with the said cam by the slamming of the door *a*, causing the said tongue or projection thereby to slip over the surface of said cam to occupy the position in the casing c^1, as clearly shown in Fig. 4, thus holding the door securely fastened against release, until the pull-handle is elevated to depress sufficiently the said cam c^2, to enable the tongue or projection a^2, to ride back over the said cam, with the door ajar and with the pull-handle in a vertical depending position. When the latch-fastener occupies the position shown in Fig. 4, in which position the door is fastened against release, the pull-handle will be in a vertical depending position with the recessed foot a^6, of said handle registering with the keeper a^7, of the locking-means *b*, arranged alongside of the pull-handle a^4. Then by turning the key *d*, in the slotted spindle or stud a^8, of the locking-means *b*, the keeper a^7 thereof, will be shifted into contact with the recessed foot a^6 of the said pull-handle to prevent further movement thereof.

Having thus described the nature and objects of my invention, what I claim as new and desire to secure by Letters Patent is:—

A latch-fastener for doors, comprising a housing having a tongue and a pivotally

supported pull-handle having a finger, a spring controlled shiftable cam mounted in a casing of the door-jamb and arranged to be actuated by said tongue to latch said door and by said finger through the actuation of said handle to release said door.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

THOMAS O. SCHRADER.

Witnesses:
MABEL G. DAVIS,
CLARA SCHAADT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

T. O. SCHRADER.

LATCH FASTENER FOR DOORS.

APPLICATION FILED DEC. 16, 1914.

1,128,727. Patented Feb. 16, 1915.

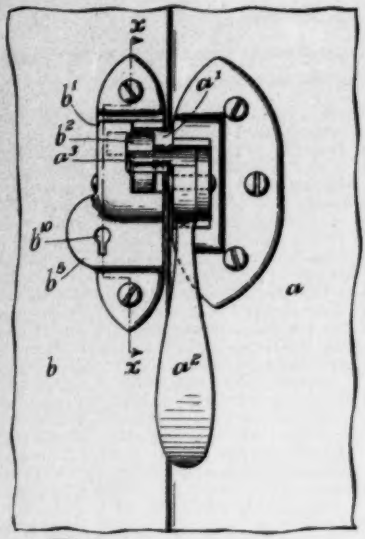


FIG. 1.

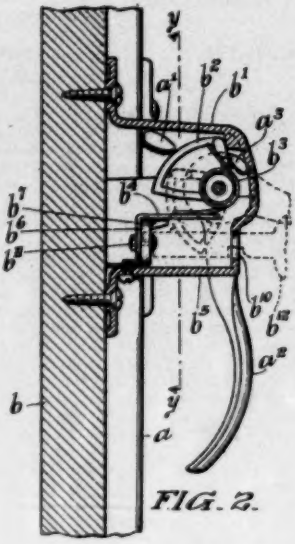


FIG. 2.

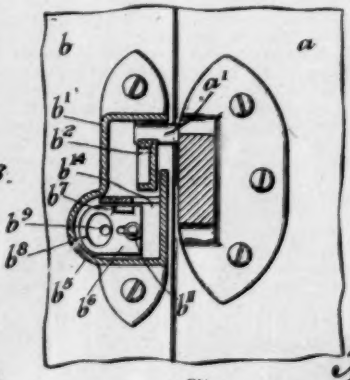


FIG. 3.

FIG. 4.

WITNESSES

Thomas M. Smith

Rose E. Smith

INVENTOR

Thomas O. Schrader,

BY J. Walter Douglas.

ATTORNEY

UNITED STATES PATENT OFFICE.

THOMAS O. SCHRADER, OF ALLENTOWN, PENNSYLVANIA, ASSIGNOR TO THE DENT HARDWARE COMPANY, OF FULLERTON, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

LATCH-FASTENER FOR DOORS.

1,128,727. Specification of Letters Patent. Patented Feb. 16, 1915.

Application filed December 10, 1914. Serial No. 876,431.

To all whom it may concern:

Be it known that I, THOMAS O. SCHRADER, a citizen of the United States, residing at Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Latch-Fasteners for Doors, of which the following is a specification.

My present invention has relation to a latch-fastener for a refrigerator or other door; and in such connection it relates to the particular constructive arrangement of the fastener in conjunction with means arranged to be manipulated so as to prevent the latch-member being operated by a pull-handle when the door is in a closed position.

My present invention to the extent above defined, embraces improvements over my prior U. S. Patent 1,117,709, issued November 17th, 1914.

The nature and scope of my present invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which—

Figure 1, is a front elevational view of a latch-fastener in application to a refrigerator door, in a closed position, embodying the main features of my said invention. Fig. 2, is a vertical sectional view on the line x, x of Fig. 1. Fig 3, is a fragmentary sectional and elevational view of the latch-fastener in application to the door and the jamb thereof; and Fig. 4, is a side elevational view of a key for operating the said slidable plate.

Referring to the drawings a, represents a door having a bracket with a projecting tongue a^1, and a pivotal pull-handle a^2, having a projecting finger a^3. The door-jamb b, is provided with a slotted casing and in which is mounted a spring controlled cam b^2. The spring b^3, of this cam bears against the same and a cover-plate b^4, located in an offset portion b^5, of the said casing b^1. This cover-plate is removably secured to one of the walls of the casing b^1, as shown in Fig. 2, and it is provided with a shiftable-plate having a lug b^7, and with an oval-shaped opening b^8, and located beneath is a socket b^9. This socket b^9, registers with a keyway b^{10}, in the casing b^1, as shown in Fig. 3. The slidable plate b^6, is held in position by means of a stud-pin b^{11}, so that when a key b^{12}, is inserted in the key-way b^{10}, the inner notched end b^{13}, of the key b^{12}, will occupy the position as shown in Fig. 2. By turning the key to the right it will be so shifted as that the lug b^7 of the plate b^6, will occupy a position in the space b^{14}, in close proximity to the cam b^2, and remain in such position until the key b^{12}, is reversed so as to permit the said plate b^6, to be shifted into the position it occupies in Fig. 3, when by raising the pull-handle a^2, the finger a^3, will depress the said cam and therewith the spring b^3, to permit of the release of the said tongue a^1, of the door from said cam b^2, and thus the door to be opened.

Having thus described the nature and object of my invention, what I claim as new and desire to secure by Letters Patent is:—

In a latch-fastener, a cam arranged on the door-jamb, a door provided with a tongue arranged to actuate said cam, a pull-handle having a finger arranged to depress said cam and a plate shiftable into the path of said cam in the latched position of said door to prevent movement of said cam, substantially as and for the purposes described.

In witness whereof, I have hereunto set my signature in the presence of two subscribing witnesses.

THOMAS O. SCHRADER.

Witnesses:
MABEL G. DAVIS,
CLARA SCHAADT.

T. O. SCHRADER.

SAFETY LOCK LATCH FOR REFRIGERATOR DOORS.

APPLICATION FILED JULY 1, 1915.

1,170,685. Patented Feb. 8, 1916.

Fig. 1.

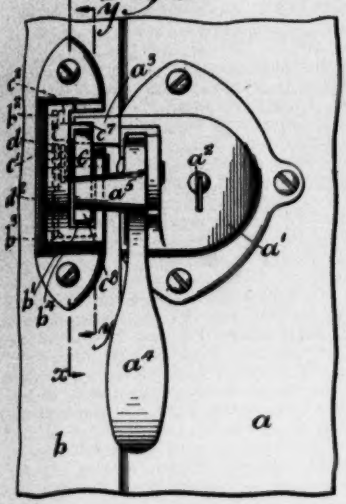


Fig. 2.

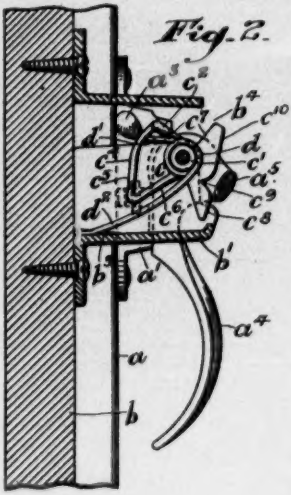


Fig. 3.

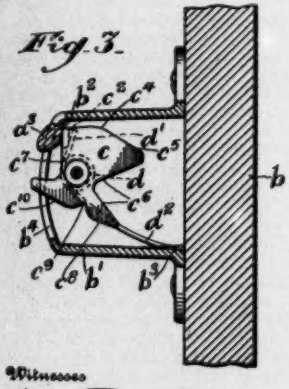
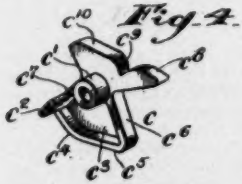


Fig. 4.



Witnesses

Thos. Rosemond.

Thomas M. Smith

Inventor

Thomas O. Schrader,

By J. Walter Douglass.

Attorney

UNITED STATES PATENT OFFICE.

THOMAS O. SCHRADER, OF ALLENTOWN, PENNSYLVANIA, ASSIGNOR TO THE DIRT HARDWARE COMPANY, OF FULLERTON, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

SAFETY LOCK-LATCH FOR REFRIGERATOR-DOORS.

1,170,685. Specification of Letters Patent. Patented Feb. 8, 1916.

Application filed July 1, 1915. Serial No. 37,412.

To all whom it may concern:

Be it known that I, THOMAS O. SCHRADER, a citizen of the United States, residing at Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Safety Lock-Latches for Refrigerator-Doors, of which the following is a specification.

My invention relates to a latch particularly adapted for use in connection with refrigerator-doors, of the type in which slamming the door against the door-jamb latches the door and turning then a key causes the engaged latch to be locked, but it has been found that when the key is turned which causes the latch to assume a locked condition, it is possible to insert a thin bar against one end of the cam-device to shift the same so as to enable the tongue of the lock-casing to clear the cam-device and thus to open the door, while the latch is still in a locked condition; and therefore, my present invention is designed to prevent just such defined act, by the provision of a peculiar form of cam-device held preferably under spring-tension and so arranged as that any attempt to release the tongue of the lock-casing as well as any attempt at manipulating the finger of the pivoted lever, will be prevented by the form of the said cam-device, when the latched door is in a locked condition.

The nature and scope of my present invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which—

Figure 1, is a front elevational view of a latch fastener with the safety feature of my present invention, embodied therein. Fig. 2, is a view partly in vertical section on the line x, x of Fig. 1, and in side elevation of the pivoted operating lever of the said latch fastener. Fig. 3, is a view in vertical section on the line y, y of Fig. 1 and in side elevation of the spring controlled cam-device embodying particular features as constructively arranged of my said invention and shown therein in a position for operating; and Fig. 4, is a perspective view of the reverse side of the cam-device to that shown in Fig. 3, detached from the casing, in which mounted.

Referring to the drawings a, is the door with a lock-casing a^1, secured thereto. This casing is provided with a key-way a^2, with a projecting tongue a^3, and an operating lever a^4, having a projecting finger a^5, for the lock arrangement of the said casing a^1, and for the operation of the same, reference is made to my United States Letters Patent No. 1,117,709 of November 17th, 1914, as showing an efficient arrangement for use with the type of latch-fastener embodying the particular features of my present invention.

The door-jamb b, is provided with a casing b^1, having an oblong opening b^2, in the top, and the said casing is secured to the door-jamb b. Internally in one corner is provided a lug b^3, and in the bottom is provided a recess b^4, both as clearly shown in Fig. 3, for purposes to be presently more fully explained.

The cam-device c, is pivotally mounted in the casing b. This device is of peculiar formation, as clearly shown in Fig. 4, having on one side a hub c^1, around which is mounted a coiled spring d, the respective terminals d^1 and d^2, of which engage a lug c^2, projecting from about one corner thereof and in the recess b^4, of the said casing b^1. One portion of the device c, as shown, is hollowed out at c^3, the periphery in this part is curved at c^4 and inclined at c^5, to the rounded end and therefrom it is formed into an inverted V-shape at c^6, and is substantially the same form on the opposite side at c^7, while the top is substantially straight across with the edge surfaces c^8 and c^{10} and having an intermediate notch c^9, between them, as clearly shown in Fig. 4. However, the detail arrangement of the said device as shown may be varied and equally good results be obtained, without departing from the scope of my present invention of the said device for the purposes defined in the said lock-latch. With said spring controlled cam-device c, mounted in the casing b^1, as clearly shown in Fig. 3, normally the lug c^7, of the said device will bear against the casing lug b^3. The arrangement of the spring as shown may be varied or omitted and still the cam-device be operative.

Slamming the door a, against the jamb b, will cause the tongue a^3, by the force exerted against the part c^7, of the device c, to move the same against the tension of the

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spring d, to allow the tongue a^3, to move into such a position as to engage the upper portion of the surface c^7 of the said cam-device to hold the said tongue against shifting and thus the door in a closed position. Turning the key in the key-way a^2, causes the operating lever a^4, to be locked with relation to the engaged position of the tongue a^3, with the said device c, as clearly shown in Fig. 2. It will thus be observed that any attempt to shift the said cam-deivce from this position with the finger a^5, in contact with the part c^8, of said device will be prevented and likewise any movement of the tongue a^3, sufficiently to release it from its engagement with the said device to open the door. The surface c^{10}, of the cam-device c, is adapted when the latch is unlocked to contact with the finger a^5, of the operating lever a^4, which depresses the part c^{10}, of the said device c, to cause it to assume momentarily such a position under the tension of the spring d, as to enable release of the tongue a^3, from its engaged relation with the part c^7, of the said device c, to thus freely open the door a. If for any reason the spring d, under which the device c, is held in operative position, as above described should become broken or disarranged and the latched door be still locked, the arrangement of the device c is such, that it will still prevent opening the door, because any attempt at shifting the device will cause at the same time, the finger a^5, of the operating lever a^4, to engage the part c^8, of the said device, to prevent a movement to such an extent as to shift the said device c, or to release the tongue a^3, from contact with the part c^7, of said device so that thereby the foregoing arrangement provides a safety lock-latch fastener for a refrigerator or other door.

Having thus described the nature and objects of my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a device of the character described, a lock-casing having a tongue, an operating lever having a finger, a casing and a spring controlled device mounted in said casing and having a cam-surface for said tongue to engage, to hold the door latched and an opposite contact-surface adapted to permit of the turning of said device in one position of movement of said finger and to prevent movement of said device in the other position of movement of said finger.

2. In a device of the character described, a lock-casing having a tongue, an operating lever having a finger, a casing having an oblong opening in the top and a spring controlled device mounted in said casing and having a cam-surface for said tongue to engage to hold the door latched and an opposite divided contact surface adapted to permit of the turning of said device in one position of movement of said finger and to prevent movement of said device in the other position of movement of said finger.

In witness whereof, I have hereunto set my signature in the presence of two subscribing witnesses.

THOMAS O. SCHRADER.

Witnesses:
MABEL G. DAVIS,
CLARA K. SCHAADT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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H. BLYE.

REFRIGERATOR LATCH.

APPLICATION FILED MAY 17, 1917.

1,238,876. Patented Sept. 4, 1917.

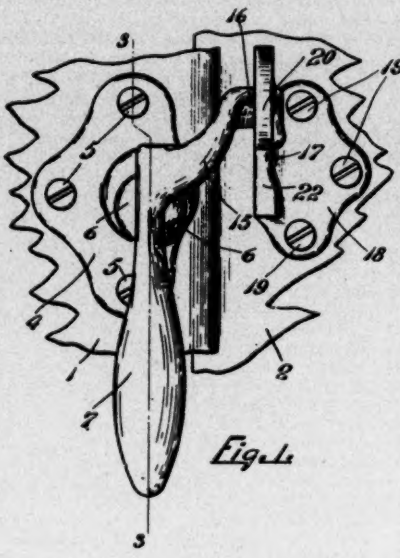

Fig. 1.

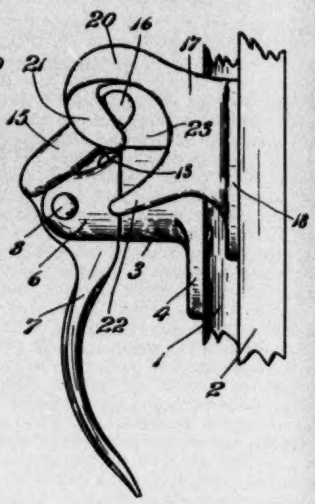

Fig. 2.

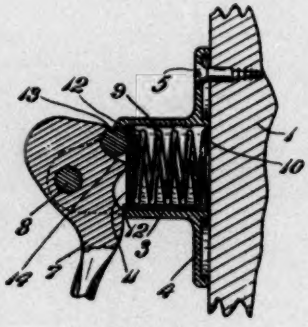

Fig. 3.

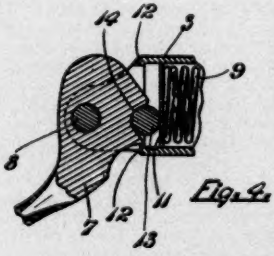

Fig. 4.

Inventor
Harold Blye
By Moulton & Livingstone
Attorneys

UNITED STATES PATENT OFFICE.

HAROLD BLYE, OF GRAND RAPIDS, MICHIGAN.

REFRIGERATOR-LATCH.

1,238,876. Specification of Letters Patent. Patented Sept. 4, 1917.

Application filed May 17, 1917. Serial No. 169,339.

To all whom it may concern:

Be it known that I, HAROLD BLYE, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Refrigerator-Latches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a latch for doors, and one which in practice is especially adapted to be used with refrigerator doors. It is desirable that a refrigerator door be provided with latch construction by means of which the door, when closed, is held tightly, and one in which the opening of the door may be attained with the least amount of trouble and effort. One of the objects and purposes of my invention is the attainment of this desired end. Another object and purpose of the invention is the construction of the latch in such manner that on moving the door toward its closed position the latch will act automatically to draw the door into tightly closed position. Many other objects and purposes of the invention will be apparent as understanding of the invention is had from the disclosure made thereof in the accompanying drawing in which;

Figure 1 is a front elevation showing the latch and the keeper therefor applied, respectively, to a door and door casing.

Fig. 2 is a side elevation showing the latch engaged with the keeper, the door being closed.

Fig. 3 is a fragmentary vertical section taken substantially on the line 3—3 of Fig. 1 with the latch occupying its closed position, and

Fig. 4 is a similar view illustrating the latch handle in another position from that shown in Fig. 3 when the door is open.

Like reference characters refer to like parts throughout the several views of the drawings.

In the use of the latch on a refrigerator, the latch is applied to the door 1 thereof while the keeper is applied to the casing 2. In construction the latch comprises a substantially cylindrical hollow housing 3 integral with which is an outwardly extending plate 4 through which screws 5 or other suitable attaching devices may be passed to attach the same to the door. Two spaced apart ears 6 project from the outer end of the housing between which a handle 7 is pivotally mounted on the pivot pin upon 8. A coil spring 9 under compression is located within the housing and disposed between two plates 10 and 11 the former of which bears against the door while the latter is pressed outwardly by spring 9, being retained from displacement from the housing by the annular inturned shoulder 12 adjacent the outer end thereof. A roller or ball 13 is located within a recess 14 made in the end and inner side of the handle, plate 11 bearing thereagainst. In one position of the handle, as shown in Fig. 3, the pressure of the spring exerts a turning moment on the handle tending to force the lower end thereof toward the door. In the other portion of the handle, as shown in Fig. 4, the line of force of the spring transmitted by the ball is substantially across the axis of the pin 8 or it may be moved slightly beyond whereby the lower end of the handle is held in outer position.

An arm 15 is cast integral with the upper end of the handle extending over the door and inwardly toward the casing and terminating in a laterally turned end 16. Said end 16 is adapted to engage with a keeper which is attached to the casing, it comprising an outwardly extending member 17 integral with which is formed a laterally extending plate 18 which is secured, by screws 19 or other suitable connections, to the casing as shown. The upper part of the part 17 is extended outwardly as indicated at 20 and is then bent back partly upon itself forming an overhanging retaining lip 21. Below the part 20 is a projection 22 having curved outline at its outer side whereby a substantially curved slot 23 is made in the keeper through which the laterally projecting end 16 of the arm 15 may move.

In the closed position of the door the force of the spring exerted on the handle causes the end 16 to engage tightly against the overhanging lip 21 of the keeper. If it is de-

sired to open the door all that is necessary is to grasp the depending portion of the handle member and exert a pull thereon, whereupon the handle as a whole is turned about the pivot 8 and the end 16 of arm 15 disengaged from the keeper and moves through the curved slot 23. The pull exerted on the handle and transmitted to the door has a tendency to open the door as the part 16 disengages from the lip 21 but if the door should stick, said part 16 strikes against the opposite side of the keeper and bears against the outward projection 22 forcing the door open. At the same time the ball or roller 14 moves across the plate 11 to substantially the position shown in Fig. 4 the spring thereupon holding the handle in the other position to which it has been moved.

On closing the door, the handle occupying the position shown in Fig. 4, the end 16 strikes against the projection 22 and causes an inward movement of the depending portion of the handle until such time as the line of force of the spring has passed by the axis of the pivot 8, after which the spring completes the inward movement of the depending portion of the handle and forces end 16 of arm 15 into engagement with the overhanging lip 21 of the keeper. It will be noted that the only action required in opening the door is to grasp the depending portion of the handle and exert a pull thereon; while in closing the door nothing is required but that the door be swung with a slight degree of force toward its closed position, the latch acting automatically to engage with the keeper and hold the door securely in closed position. The latch also is particularly effective against any opening of the door from the inside as may occur when ice or the like falls against it, the inclination of the retaining lip 21 of the keeper with respect to the end 16 which engages therewith being such that force applied on the inside of the door against the part 16 causes it to engage more strongly with the part 21. All of these features in connection with especially simple and economical structure of the latch mechanism make the latch one of particular merit when used in connection with refrigerators.

I claim:—

1. In a device of the character described, a housing, a handle pivotally mounted on the housing, an arm on the handle, said arm being provided with a laterally projecting end adapted to engage a keeper, a spring within the housing, a plate between the spring and handle normallly forced toward the lever by the spring, and a roller seated in a recess on the inner side of the lever and interposed between the lever and plate, said roller being so positioned with respect to the handle that it moves across the plate on outward movement of the handle, the line of force of the spring passing across the pivotal axis of the handle, substantially as described.

2. In a device of the character described, a pivotally mounted handle, an arm projecting from one end of the handle, said arm having a laterally extending keeper engaging end and spring means associated with the handle for holding it in either of two extreme positions between which it is adapted to move, the line of force of the spring crossing the pivotal axis of the handle as the handle moves from one position to the other.

3. In a device of the character described, a housing, spaced ears projecting from the housing, a handle pivotally mounted between said ears, an arm on the handle at the upper end thereof extending laterally and inwardly and terminating in a lateral keeper engaging end, and mechanism within the housing associated with the handle for holding it in either of two extreme positions between which it is operable.

4. In a device of the character described, a pivotally mounted handle, an arm on the handle at one end thereof and adjacent the pivot, said arm terminating in a laterally projecting end adapted to engage with a keeper, mechanism associated with the handle for holding it in either of two extreme positions between which it is operable, and a keeper having a slot into which said keeper engaging end of the arm is adapted to enter to engage against the keeper and automatically throw the handle from one position to the other, simultaneously moving the keeper engaging portion of the handle into engagement with the keeper.

5. In combination with a door, a housing secured to the door and projecting therefrom, a handle pivotally mounted over the housing said handle at its upper end and its inner side being provided with a recess, a roller seated in the recess, a plate within the housing a spring within the housing forcing the plate against the roller, a door casing, a keeper secured thereto, an arm having a keeper engaging portion on the handle, said keeper engaging portion engaging with the keeper when the door is in closed position but disengaging therefrom on outward pivotal movement of the lower end handle, substantially as described.

6. In combination, a door casing, a keeper having a slot therein extending inwardly from the outer edge of the keeper and curving upwardly and forwardly back of an overhanging lip on the keeper, a door, a latch comprising a housing attached to the door, a handle pivotally mounted on the housing, means within the housing as-

ciated with the handle for holding the same in either of two extreme positions between which it is adapted to be moved, and a keeper engaging part on the handle adapted to enter the slot in the keeper and engage with the keeper as the door is closed, automatically causing the handle to throw from one position to the other whereby said keeper engaging part enters into the slot of the keeper and engages against said lip, substantially as described.

In testimony whereof I affix my signature.

HAROLD BLYE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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A. D. WARD.

REFRIGERATOR DOOR LOCK.

APPLICATION FILED FEB. 1, 1917.

1,250,736. Patented Dec. 18, 1917.

Fig. 1.

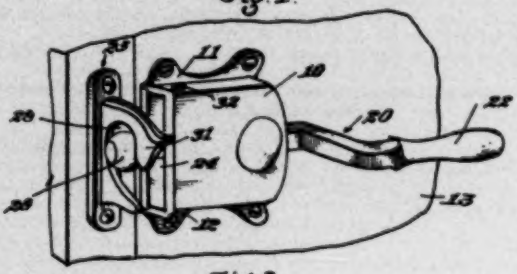


Fig. 2.

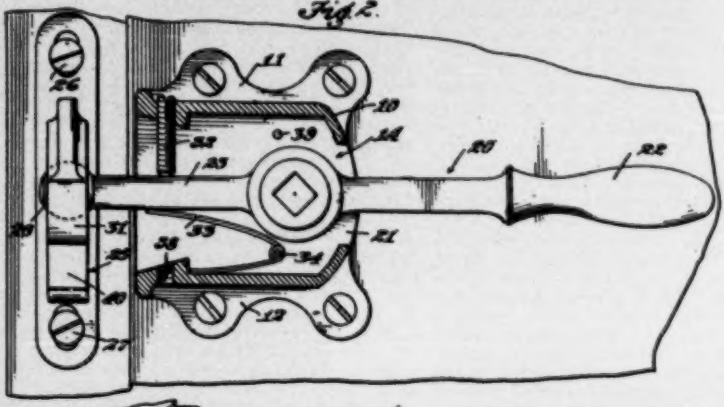


Fig. 3.

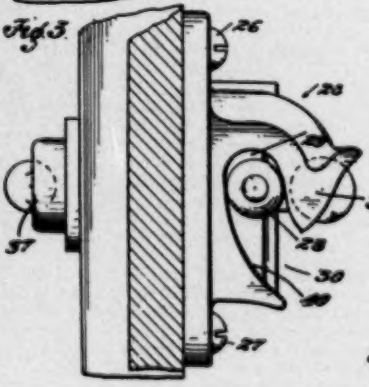
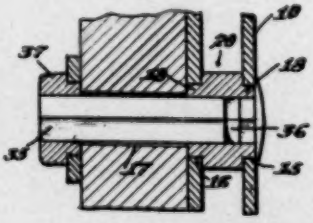


Fig. 4.



Inventor.
Abraham D. Ward.
by Hazard & Miller
Attys.

UNITED STATES PATENT OFFICE.

ABRAHAM D. WARD, OF LOS ANGELES, CALIFORNIA

REFRIGERATOR-DOOR LOCK.

1,250,736. Specification of Letters Patent. Patented Dec. 18, 1917.

Application filed February 1, 1917. Serial No. 143,987.

To all whom it may concern:

Be it known that I, ABRAHAM D. WARD, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Refrigerator-Door Locks, of which the following is a specification.

This invention relates to a door lock and particularly pertains to a latch for refrigerator doors and the like.

The locks used on most refrigerator doors are so constructed as to wedge the doors into a closed and sealed position. When it is desired to open the doors, however, great force must be used to break the seal and cause the door to swing outwardly to its open position. It is the principal object of this invention to provide a door latch which will act to tightly close the door and when actuated in a reverse manner will act to break the seal and open the door so that there will be no difficulty experienced in tightly closing the door or opening it thereafter.

Another object of this invention is to provide a door latch which is formed of few parts and which may be easily actuated by means of a single actuating lever to either open or close the door.

Another object of this invention is to provide a lock of the above class which possesses a bolt so constructed as to not become wedged within the keeper and not liable to wear either the keeper or the bolt member.

It is a further object of this invention to provide a lock which is decidedly strong in construction and which will act in an automatic manner to lock and close or open and unlock a door by slight movement of a single locking lever.

Other objects will appear hereinafter.

The invention is illustrated, by way of example, in the accompanying drawings in which:

Figure 1 is a view in perspective illustrating the latch in its locked position upon a refrigerator.

Fig. 2 is a view in front elevation with parts broken away to more clearly illustrate the latch construction and its movement of operation.

Fig. 3 is a view in end elevation particularly illustrating the peculiar formation of the bolt keeper.

Fig. 4 is a view in transverse section illustrating the manner in which the operating handle is mounted within its casing.

Referring more particularly to the drawings, 10 indicates a lock casing which is here shown as substantially rectangular in shape and provided with outwardly extending flanges 11 and 12 by which it may be secured to the face of a door 13. The sectional configuration of the lock housing is channel shape forming an opened side or back which is adapted to be fitted with a back plate 14 held in place by the housing. The front plate of the housing is formed with a circular bore 15 which is in horizontal alinement with a bore 16 formed through the back plate of the lock and in communication with a passage-way 17 extending through the door. The two bores are provided to receive trunnions 18 and 19 formed upon opposite sides of the central boss of a lock handle 20. This handle extends rearwardly from the boss through an opening 21 in the end of the lock housing and is there formed with a handle grip 22 by which the lock may be operated. A lock bolt 23 is formed integral with the handle and extends in alinement therewith through an end opening 24 in the housing. This bolt is of a length sufficient to permit it to extend across the edge of the door and to engage a bolt keeper 25 secured by screws 26 and 27 to the door post. The end of the lock bolt 23 is provided with a roller ball 28 which allows the bolt to be actuated without appreciable friction.

Reference being had to Fig. 3 it will be seen that the keeper is of peculiar configuration and is an essential feature of the invention. As shown, an arcuate roller slot 29 is formed by the keeper and is of a width approximately that of the diameter of the roller ball 28. This slot has an opening 30 at its lower end, through which the ball 28 may pass. The walls of the slot leading from the opening taper inwardly and upwardly and cause the door to be drawn inwardly to a tightly closed position as it is locked. The upper portion of the keeper surrounding the throat of the arcuate slot is formed with a horn 31 which tapers inwardly and downwardly in a manner to de-

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press the ball roller 28 when closing the door and to lead it into the slot without manipulation of the lock handle.

As a means for adjusting the sealing and locking action of the lock, an adjusting screw 32 is provided and is here shown as extending downwardly through the upper side wall of the lock housing to bear against the upper face of the lock bolt. The bolt 23 is held against the screw 32 by means of a leaf spring 33 which is mounted upon a pin 34 extending outwardly from the back plate of the lock. When the draw of the lock is to be increased the spring 33 is relieved from the lock bolt 23 and will cause the roller 28 to move farther into the throat of the groove 29 as the door is locked. This, as will be seen, causes the door to be drawn forcibly into its closed position and more thoroughly sealed.

In order to permit the door to be locked and unlocked from the interior of the refrigerator or room, a square pin 35 is positioned within a socket 36 in the lock handle. This pin extends through the opening 17 in the door and is fitted with an actuating handle 37 which is secured to the end of the pin and upon the opposite side of the door from the lock, thus permitting the lock to be readily actuated from the side of the door.

Attention is directed to the fact that the parts of this lock are reversible as in some locations and for some uses it would be desirable to pull downwardly upon the handle 20 when opening the door instead of upwardly as here shown. In this case the keeper 25 is inverted so that its throat opening will be above the normal locked position of the bolt. In order to cause the lock bolt to properly seat within the keeper when so inverted the adjusting screw 32 is positioned through a threaded opening 38 in the lower side wall of the lock housing and the leaf spring 33 is mounted upon a pin 39 extending from the back plate and positioned above the lock bolt, as will be evident.

When the lock is mounted upon a door the back plate and lock housing are secured by means of suitable screws to the face of the door and the keeper is fastened upon the face of the door post. The screw 32 is then adjusted to bring the bolt 23 and handle 20 in substantial horizontal alinement, after which the keeper is moved vertically, due to the clearance afforded by the screw slots in its bolting flange. When proper adjustment has been made to permit the door to properly seal the screws 26 and 27 are tightened and the lock is ready for use. Attention is directed to the fact that it is important to normally locate the keeper so that the face of the horn 31 will strike the center of the roller 28 substantially midway its length and thereby insure that the roller will be properly led into the arcuate locking slot.

In operation the door is closed. As it reaches its closed position the roller 28 will strike the forward downwardly tapering face of the horn 31 and will be led downwardly and into the slot 29, after which the lock handle may be depressed and this will force the ball 28 along the rear face of the horn 31 to seal the door. When the door is opened the roller will bear upon the face of the arcuate slot and as it is moved downwardly it will naturally be advanced to cause the door to partially open, thus breaking the seal and allowing the door to be thereafter easily handled.

It will thus be seen that the lock here provided will act in an effective manner to simultaneously lock and clamp a door in position and when its operation is reversed will simultaneously unlock and open the door with the use of a single lever and by a single movement.

While I have shown the preferred construction of my lock as now known to me, it will be understood that various changes in the combination, construction and arrangement of parts may be made by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A refrigerator door lock comprising a casing having opposite screw seats and opposite spring seats, a lock handle having a boss within the casing, trunnions extending from the boss forwardly and backwardly into recesses in the casing to pivotally mount the handle, a lock bolt extending from the boss in the opposite direction from the handle centrally between the screw seats and between the spring seats and projecting from the casing, an adjusting screw adapted to be mounted through either screw seat to engage the lock bolt and limit the motion of the bolt in one direction, and a spring adapted to be mounted in either spring seat to press the bolt against the adjusting screw, the arrangement of the casing, adjusting screw and spring being such that the screw and spring may be moved from one side to the other of the bolt to operate the bolt in either direction as desired and make the lock reversible.

2. A refrigerator door lock comprising a casing adapted to be mounted against the face of a door having opposite screw seats and opposite spring seats, a handle having a central boss provided with trunnions extending both ways into recesses in the casing to pivotally mount the handle, a lock bolt extending from the central boss between the screw seats and between the spring seats, a roller ball mounted upon the tip of the lock bolt, a set screw adapted to be adjustably mounted through either screw seat to limit the swinging of the lock bolt in one direction, a spring adapted to be mounted in either

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spring seat to press the lock bolt against the set screw, the spring and set screw being thus reversible to change the direction of the lock bolt as desired, and a bolt keepe adapted to be mounted upon the frame of the door and adapted to be engaged by the roller tip of the lock bolt, said keeper having an inclined horn leading to an arcuate roller slot so that the roller ball will pass the horn to the slot when the door is slammed shut and so that when the roller ball is in the slot, operation of the handle will force the door closed or open as desired.

In testimony whereof I have signed my name to this specification.

ABRAHAM D. WARD

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T. O. SCHRADER.
LATCH FOR DOORS.
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1,265,120.

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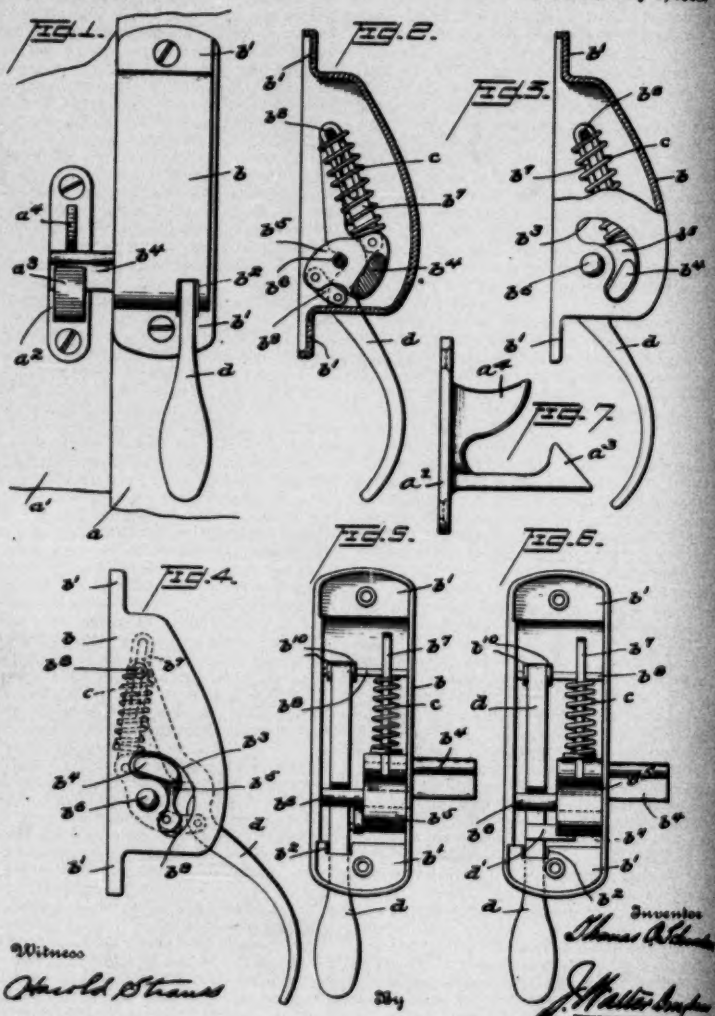

Witness
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